

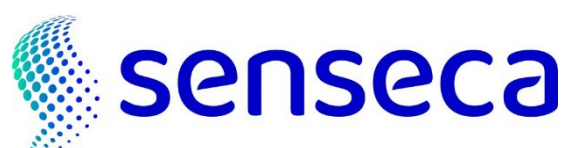
DATASHEETS COLLECTION

HD35 series

Wireless data loggers



EN_vs3.0



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1 Introduction

The HD35 series wireless data logging system allows several physical quantities to be monitored in a large variety of application fields.

Data loggers with integrated sensors, external probes, RS485 Modbus-RTU inputs, or analog inputs for standard sensors are available, allowing the system monitoring capacity to be extended to countless variables.

For each detected quantity, the user can set two alarm thresholds, with configurable hysteresis and alarm delay for each quantity. The overrun of the thresholds can be indicated by an audible signal of the data logger through an internal buzzer; the alarm signal is immediately transmitted to the base unit and displayed on the PC. A wireless remote alarm module with relay output is available allowing other signaling devices (sirens, flashing lights...) or actuators to be activated. If the system is equipped with a cellular module, the alarm can be signaled also by e-mails or SMS messages.

Systems with the following transmission frequencies are available: **868 MHz** (in compliance with ETSI EN 300 220 European Directive), **902-928 MHz** (in compliance with U.S. FCC part 15 section 247 and I.C. RSS-210 Directives) and **915,9-929,7 MHz** (in compliance with ARIB STD-T108 standard).

Thanks to wireless transmission, the installation of the system is a very simple and quick operation. In addition, the user will not have to remove the data logger from its position or reach the place where the data logger is installed to download the data measured with the PC.

The correctness of the transmitted data is ensured by the **bidirectional** communication between the base unit and the remote data loggers.

HD35AP-S PC software, downloadable free of charge from Senseca website, allows configuration of all system devices, display of connection status, level of the RF signal and battery charge level, data automatic download at regular intervals or manual download on request of the user. The data transferred to the PC are entered into a database.

Data loggers comply with **EN 12830** standard. The **optional HD35AP-CFR21** advanced version of the software is designed in compliance with **FDA 21 CFR part 11** recommendations: the operations are protected by access codes and a record of the performed operations is kept.

2 System components

The system consists of:

- **HD35AP...** Base unit
It is the interface between the data loggers, located at the measurement sites, and the PC. It communicates wireless with the remote data loggers.
- **HD35RE...** Optional repeaters
Placed between the base unit HD35AP... and the remote data loggers HD35ED..., allowing the distance between data loggers and base unit to be increased. Several repeaters in cascade can be used.
- **HD35ED...** One or more data loggers
Remote devices with measurement probes, installed in the locations to be monitored. They acquire measurements, store them in the internal memory and send them automatically to the base unit at regular intervals or on request of the user.
- **HD35ED-ALM** Remote alarm device
With relay outputs to activate, in case of an alarm, signaling devices (sirens, flashing lights...) or actuators.

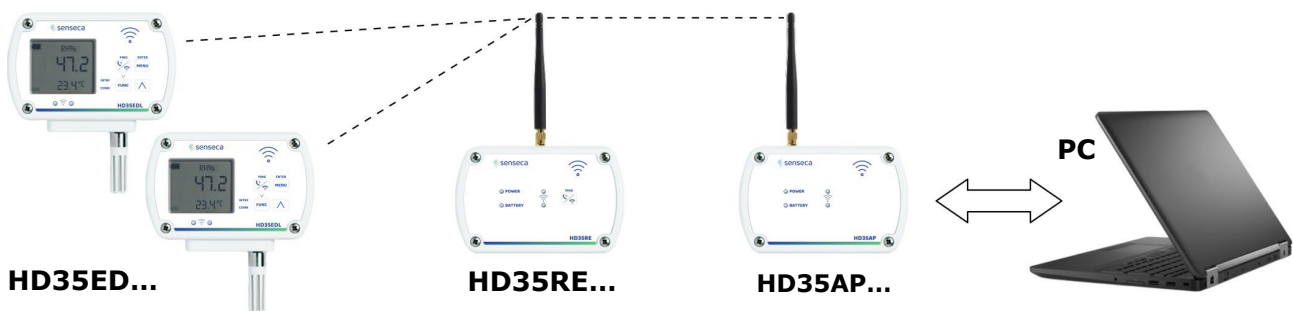


Fig. 2.1: example of a wireless system

3 Indoor Models – Access Points

HD35APD - BASE UNIT (ACCESS POINT) WITH USB OUTPUT – “DONGLE” VERSION



Device acting as an interface between the network data loggers that are positioned in the measurement sites, and the PC. It receives via wireless the data acquired by the remote data loggers and communicate with the PC via the **USB** output.

Does not require the installation of USB drivers.

Directly powered by the USB port of the PC.

If the PC is not connected, the internal memory allows the storage of the measurement data received from the data loggers (the memory is managed in circular mode: when the memory is full, the oldest data are overwritten by the new ones).

Configuration via **HD35AP-S** software.

Internal antenna.

TECHNICAL CHARACTERISTICS

Transmission frequency	868 MHz or 902-928 MHz depending on the frequency in use in the country of installation
Transmission range	In open field: 180 m (E, U) (can be reduced in presence of obstacles or adverse atmospheric conditions)
Power supply	Directly powered by a PC USB port.
Internal battery	No
USB output	Yes, with “A” type connector
RS485 output	No
Ethernet connection	No
Wi-Fi connection	No
GSM connection	No
Operating conditions	-10...+60 °C / 0...85 %RH non condensing
Dimensions	62 x 25,5 x 13,2 mm

CONNECTION TO PC – USB CONNECTION



ORDERING CODES

HD35APD.	E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand) The option J (Japan) is not available
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HD35APW - BASE UNIT (ACCESS POINT) WITH USB OUTPUT, ETHERNET CONNECTION AND WI-FI INTERFACE



Device acting as an interface between the network data loggers that are positioned in the measurement sites, and the PC/PLC. It receives via wireless the data acquired by the remote data loggers and communicate with the PC/PLC via the **USB** output or the **Ethernet** or **Wi-Fi** local network. Does not require the installation of USB drivers.

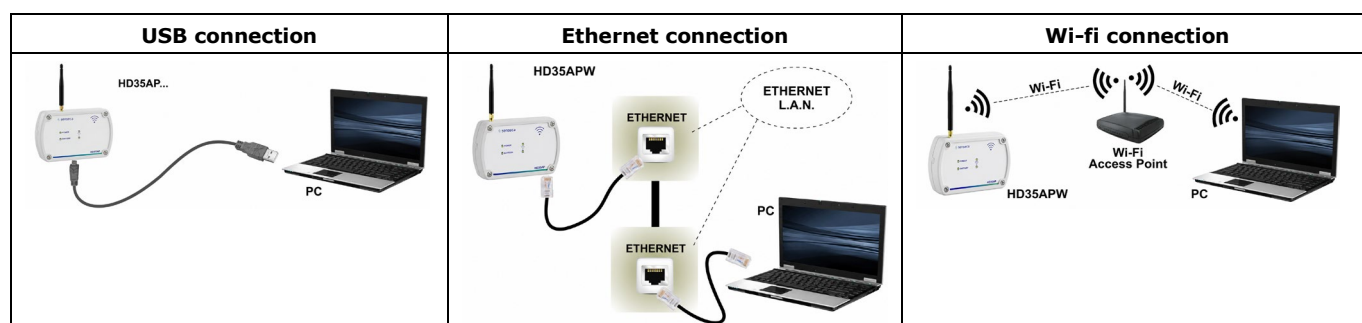
Directly powered by the USB port of the PC, if connected, or by the external 6 Vdc power supply. Internal backup battery. If the PC is not connected, the internal memory allows the storage of the measurement data received from the data loggers (the memory is managed in circular mode: when the memory is full, the oldest data are overwritten by the new ones).

Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software. Wall mount removable (by using the included support) or fixed (with optional flanges) installation.

TECHNICAL CHARACTERISTICS

Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz or 915,9-929,7 MHz depending on the frequency in use in the country of installation
Transmission range	In open field: 300 m (E, J)/ 180 m (U) towards data loggers with internal antenna. > 500 m (E, J, U) towards repeaters and data loggers with external antenna. (can be reduced in presence of obstacles or adverse atmospheric conditions)
Power supply	Internal lithium-ion 3.6 V rechargeable battery, 2250 mA/h capacity, JST 3-pole connector. Optional external 6 Vdc power supply (SWD06). Directly powered by a PC USB port (*).
Consumption	≈180 mA with Ethernet, ≈150 mA with Wi-Fi
Battery life	≈12 hours with Ethernet, ≈14 hours with Wi-Fi
USB output	Yes, with Mini-USB connector (CP31 cable)
RS485 output	No
Ethernet connection	Yes. Allows the transmission of alarm e-mail and data by e-mail , FTP or HTTP (Cloud). Supports the Mod-bus TCP/IP protocol.
Wi-Fi connection	Yes. Allows the transmission of alarm e-mail and data by e-mail , FTP or HTTP (Cloud). Supports the Mod-bus TCP/IP protocol.
GSM connection	No
Operating conditions	-10...+60 °C / 0...85 %RH non condensing
Dimensions	135 x 86 x 33 mm (excluding antenna)
Weight	200 g approx.
Housing	ABS

(*) The connection of the SWD06 external power supply is necessary if the Ethernet or Wi-Fi transmission is used.



ORDERING CODES

HD35APW.	J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)
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HD35APS - BASE UNIT (ACCESS POINT) WITH USB AND RS485 MODBUS-RTU OUTPUTS



Device acting as an interface between the network data loggers that are positioned in the measurement sites, and the PC/PLC. It receives via wireless the data acquired by the remote data loggers and communicate with the PC/PLC via the **USB** output or the **RS485** with **Modbus-RTU** protocol output.

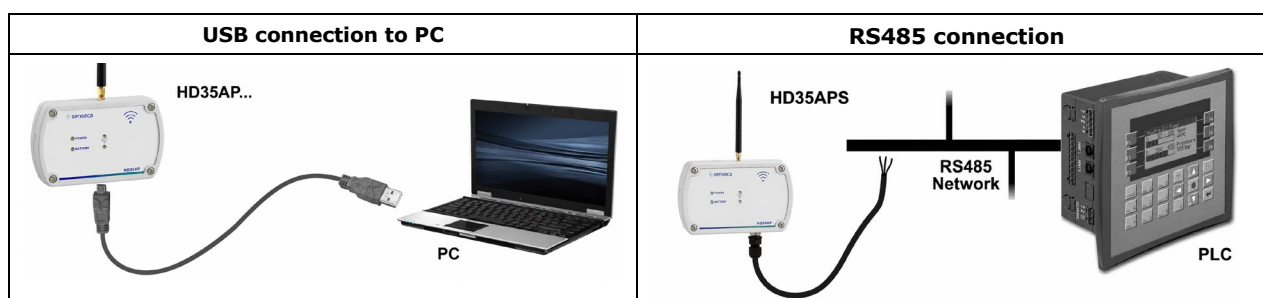
Does not require the installation of USB drivers. In RS485 Modbus-RTU mode, the base unit operates as a multiplexer for the transmission of Modbus commands from PC/PLC to network devices.

Directly powered by the USB port of the PC, if connected, or by the external 6 Vdc power supply. Internal backup battery.

If the PC is not connected, the internal memory allows the storage of the measurement data received from the data loggers (the memory is managed in circular mode: when the memory is full, the oldest data are overwritten by the new ones). Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software. Wall mount removable (by using the included support) or fixed (with optional flanges) installation.

TECHNICAL CHARACTERISTICS

Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz, 921.5-928 MHz or 915,9-929,7 MHz depending on the frequency in use in the country of installation
Transmission range	In open field: 300 m (E, J)/ 180 m (U) towards data loggers with internal antenna. > 500 m (E, J, U) towards repeaters and data loggers with external antenna. (can be reduced in presence of obstacles or adverse atmospheric conditions)
Power supply	Internal lithium-ion 3.6 V rechargeable battery, 2250 mA/h capacity, JST 3-pole connector. Optional external 6 Vdc power supply (SWD06). Directly powered by a PC USB port (*).
Consumption	≈30 mA (E, U) / ≈38 mA (J)
Battery life	≈3 days (E, U) / > 2 days (J)
USB output	Yes, with Mini-USB connector (CP31 cable)
RS485 output	Yes, with Modbus-RTU protocol
Ethernet connection	No
Wi-Fi connection	No
GSM connection	No
Operating conditions	-10...+60 °C / 0...85 %RH non condensing
Dimensions	135 x 95 x 33 mm (excluding antenna)
Weight	200 g approx.
Housing	ABS



ORDERING CODES

HD35APS.	J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)
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HD35APR - BASE UNIT (ACCESS POINT) FOR 35 MM DIN RAIL WITH USB, ETHERNET AND RS485 MODBUS-RTU CONNECTIONS



Device acting as an interface between the network data loggers that are positioned in the measurement sites, and the PC/PLC. It receives via wireless the data acquired by the remote data loggers and communicates with the PC/PLC via one of the following possibilities:

- **USB** output
- **RS485** output with **Modbus-RTU** protocol
- **Ethernet** local network (proprietary TCP/IP or Modbus TCP/IP protocol)

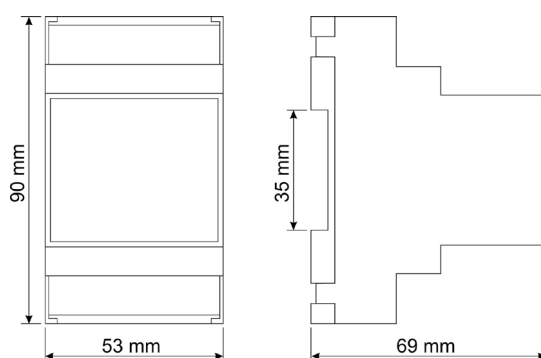
The USB connection does not require the installation of drivers. In RS485 Modbus-RTU or Ethernet Modbus TCP/IP mode, the base unit operates as a multiplexer for the transmission of Modbus commands from PC/PLC to network devices.

Connected to the Ethernet local network, allows sending alarm **e-mails** and data via **e-mail**, to an **FTP** address or to an HTTP server (**Cloud**). 8...30 Vdc external power supply.

If the PC is not connected, the internal memory allows the storage of the measurement data received from the data loggers (the memory is managed in circular mode: when the memory is full, the oldest data are overwritten by the new ones). Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software. 35 mm DIN rail installation.

TECHNICAL CHARACTERISTICS

Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz, 921.5-928 MHz or 915,9-929,7 MHz depending on the frequency in use in the country of installation
Transmission range	In open field: 300 m (E, J)/ 180 m (U) towards data loggers with internal antenna. > 500 m (E, J, U) towards repeaters and data loggers with external antenna. (can be reduced in presence of obstacles or adverse atmospheric conditions)
Power supply	external 8...30 Vdc (no internal battery)
Consumption	40 mA @ 24 Vdc
USB output	Yes, with Mini-USB connector (CP31 cable)
RS485 output	Yes, with Modbus-RTU protocol
Ethernet connection	Yes, with proprietary TCP/IP or Modbus TCP/IP protocol
Wi-Fi connection	No
GSM connection	No
Operating conditions	-10...+60 °C / 0...85 %RH non condensing
Dimensions	90 x 53 x 69 mm
Weight	200 g approx.
Housing	polycarbonate blend (PC + ABS)



ORDERING CODES

HD35APR.	J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)
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HD35APG / HD35AP3G / HD35AP4G – CELLULAR BASE UNITS WITH USB OUTPUT AND INTEGRATED 4G/3G/GSM/GPRS MODULE



The HD35APG, HD35AP3G and HD35AP4G base units act as the interface between the wireless data loggers installed at the measurement sites and a PC. They receive measurement data from the remote data loggers via RF and communicate with the PC through the USB interface or the integrated cellular module. No USB driver installation is required.

Depending on the model, the cellular module supports **GSM/GPRS**, **3G/GSM/GPRS** or **4G/3G/GSM/GPRS** connectivity. It enables alarm notifications to be sent via **email** or **SMS** and recorded data to be transferred via **email**, **FTP** or **HTTP server (cloud)**. SMS commands can also be sent to the base unit to modify selected cellular settings.

The base unit can be powered through the PC USB port or by an external **6 Vdc power supply**. An internal rechargeable battery provides backup power. The external **SWD06** power supply is required when cellular communication is used.

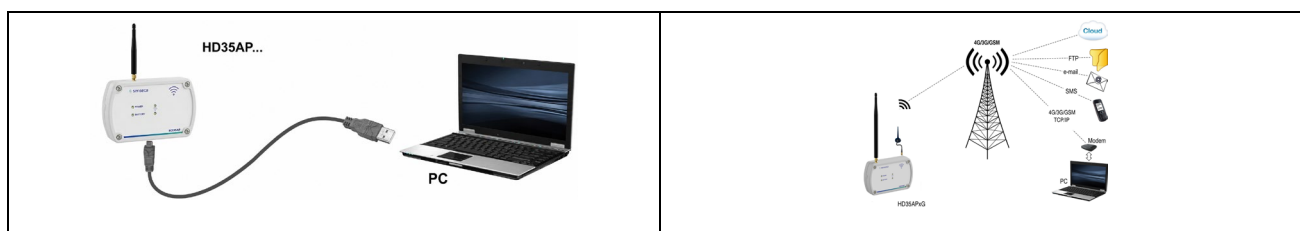
When the PC is disconnected, received measurements are stored in the internal circular memory. Once the memory is full, the oldest records are overwritten by new data. Additional features include an internal acoustic alarm, configuration through the **HD35AP-S** software and removable wall mounting using the supplied support. Fixed installation is possible using the optional mounting flanges.

TECHNICAL CHARACTERISTICS

Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz or 921.5-928 MHz depending on the frequency in use in the country of installation
Transmission range	In open field: 300 m (E, J)/ 180 m (U) towards data loggers with internal antenna. > 500 m (E, J, U) towards repeaters and data loggers with external antenna. (can be reduced in presence of obstacles or adverse atmospheric conditions)
Power supply	Internal lithium-ion 3.6 V rechargeable battery, 2250 mA/h capacity, JST 3-pole connector. Optional external 6 Vdc power supply (SWD06). Directly powered by a PC USB port (*).
Current consumption	HD35APG: ≈30 mA (E, U) average (**) HD35AP3G/4G: ≈40 mA (E, U) / ≈50 mA (J) average (**) < 2 A peak during mobile network activity
Battery life	HD35APG ≈3 days (E, U) (**) HD35AP3G / HD35AP4G: ≈2 days (E, U) / > 1 day (J) (**)
USB output	Yes, with Mini-USB connector (CP31 cable)
RS485 output	No
Ethernet connection	No
Wi-Fi connection	No
GSM/GPRS connection	Yes, for the transmission of alarm e-mail or SMS and data by e-mail , FTP or HTTP (Cloud) .
Operating conditions	-10...+60 °C / 0...85 %RH non condensing
Dimensions	135 x 86 x 33 mm (excluding antenna)
Weight	200 g approx.

(*) The connection of the SWD06 external power supply is necessary if the 4G/3G/GSM/GPRS transmission is used.

(**) Average with typical 4G/3G/GSM/GPRS activity (an intensive use of the 4G/3G/GSM/GPRS transmission can significantly increase the consumption and reduce the battery life).



ORDERING CODES

HD35APG / AP3G / AP4G.	RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan – not available for HD35APG) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)
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4 Indoor Models – Repeaters & Alarms

HD35RE - WIRELESS REPEATER (RANGE EXTENDER)



The device is able to act as a bridge between the base unit HD35AP... and the remote data loggers HD35ED..., allowing the communication distance between data loggers and base unit to be increased.

Several repeaters in cascade can be used.

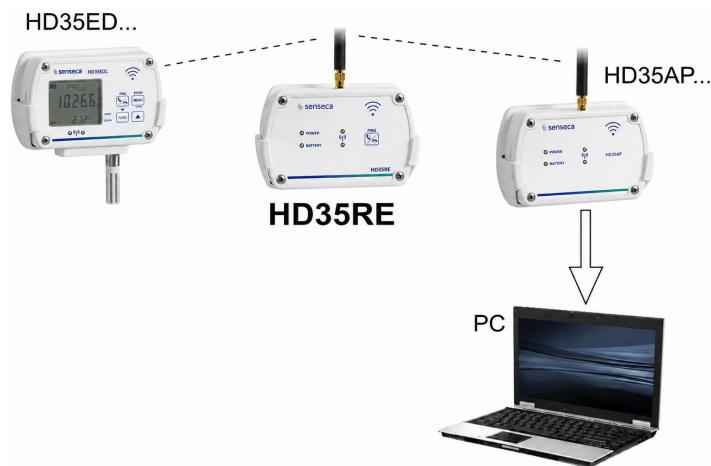
External 6 Vdc power supply. Internal backup battery.

Configuration via **HD35AP-S** software. Wall mount removable (by using the included support) or fixed (with optional flanges) installation.

TECHNICAL CHARACTERISTICS

Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz, 921.5-928 MHz or 915,9-929,7 MHz depending on the frequency in use in the country of installation
Transmission range	In open field: 300 m (E, J)/ 180 m (U) towards data loggers with internal antenna. > 500 m (E, J, U) towards base unit, repeaters and data loggers with external antenna. 180 m (E, U) towards HD35APD. (can be reduced in presence of obstacles or adverse atmospheric conditions)
Power supply	Internal lithium-ion 3.6 V rechargeable battery, 2250 mA/h capacity, JST 3-pole connector. Optional external 6 Vdc power supply (SWD06). Directly powered by a PC USB port.
Current consumption	≈30 mA (E, U) / ≈38 mA (J)
Battery life	≈3 days (E, U) / > 2 days (J)
Operating conditions	-10...+60 °C / 0...85 %RH non condensing
Dimensions	135 x 86 x 33 mm (excluding antenna)
Weight	200 g approx.
Housing	ABS

EXTENDING THE TRANSMISSION RANGE



ORDERING CODES

HD35RE.	RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)
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HD35ED-ALM - WIRELESS ALARM MODULE



Wireless module with two relay outputs for signalling alarm events. Acoustic alarm with internal buzzer. It allows to activate more signalling devices (sirens, blinking lights, etc.) or actuators.

Bistable relays with potential-free contact

Configuration via **HD35AP-S** software. Powered by the internal battery. Wall mount removable (by using the included support) or fixed (with optional flanges) installation.

TECHNICAL CHARACTERISTICS

Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz or 921.5-928 MHz depending on the frequency in use in the country of installation
Transmission range	In open field (may be reduced by obstacles or adverse weather conditions): 180 m (E, U) to the HD35APD base unit 300 m (E, J) / 180 m (U) to other devices
Power supply	Non rechargeable lithium thionyl chloride (Li-SOCl ₂) internal battery, 3.6 V, size A, 2-pole Molex 5264 connector
Battery life	1 year in typical operating conditions. The effective life depends on how often the alarm condition is generated
Relays	2 bistable relays with potential-free contact. Contact: max 1A @ 30Vdc resistive load
Buzzer	Sounds cyclically when an alarm condition occurs: 1 single beep indicates that relay 1 is active; 2 beeps in rapid succession indicate that relay 2 is active; 3 beeps in rapid succession indicate that both relays are active.
Operating conditions	-10...+70 °C / 0...85 %RH non condensing
Dimensions	135 x 110 x 33 mm
Weight	200 g approx.
Housing	ABS

ORDERING CODES

HD35ED-ALM.	RADIO FREQUENCY: E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand) The option J (Japan) is not available
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5 Indoor Models – End Devices

Measured quantities	Sensor/configuration	Without display	With display
Temperature	NTC probe with cable, 3 channels	HD35EDN/3TC...	HD35EDLN/3TC...
Temperature	Fixed NTC probe	HD35EDNTV...	HD35EDLNTV...
Temperature	Pt100/Pt1000 probe with cable, 1 channel	HD35ED7P/1TC...	HD35EDG7P/1TC...
Temperature	Pt100/Pt1000 probes with cable, 3 channels	HD35ED7P/3TC...	HD35EDG7P/3TC...
Relative Humidity & Temperature	Combined NTC and RH probe with cable	HD35ED1NTC...	HD35EDL1NTC...
Relative Humidity & Temperature	Fixed NTC probe, chemically resistant RH sensor	HD35ED1NTV...	HD35EDL1NTV...
Relative Humidity & Temperature	Fixed probe, standard RH module	HD35ED1NTVI...	HD35EDL1NTVI...
Relative Humidity, Temperature & Atmospheric Pressure	Fixed probe and integrated pressure sensor	HD35ED14bNTVI...	HD35EDG14bNTVI...
Relative Humidity & Temperature	Combined Pt100 and RH probe with cable	HD35ED17PTC...	HD35EDL17PTC...
CO ₂ , Relative Humidity & Temperature	Integrated sensors, CO ₂ up to 5000 ppm	HD35ED1NB...	HD35EDG1NB...
Differential Pressure	Autozero, ± 100 Pa	HD35ED4r1Z...	HD35EDL4r1Z...
Differential Pressure	Different pressure ranges	HD35ED4r1/2/3/4...	HD35EDL4r1/2/3/4...
Temperature, Relative Humidity & Differential Pressure	Fixed probe, autozero, ± 100 Pa	HD35ED1N4r1ZTV...	HD35EDL1N4r1ZTV...
Temperature, Relative Humidity & Differential Pressure	Fixed probe, different pressure ranges	HD35ED1N4r...TV...	HD35EDL1N4r...TV...
Temperature, Relative Humidity & Illuminance	Fixed probe, illuminance up to 20,000 lux	HD35ED1NITV...	HD35EDL1NITV...
Standard Analog Sensors	Three configurable terminal inputs	HD35EDH...	HD35EDGH...

HD35EDN/3TC – HD35EDLN/3TC - 3-INPUT TEMPERATURE WIRELESS DATA LOGGER FOR NTC SENSOR TEMPERATURE PROBES WITH CABLE



Temperature wireless data logger. Custom LCD display (only with **option L**). It stores the measures in its internal memory (from 42,000 to 68,000 samples depending on the number of inputs) and transmits the logged data to the base unit automatically at regular intervals or upon request.

Three inputs with M12 connector for temperature probes with **NTC10K Ω** sensor. 42,000 samples.

Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software or front keyboard (only version with LCD). Powered by the internal battery. Wall mount removable (by using the included support) or fixed (with optional flanges) installation.

TECHNICAL CHARACTERISTICS

Temperature	
Sensor	NTC 10 k Ω @ 25 °C
Measuring range	-40...+105 °C (the measuring range can be limited by the operating temperature of the used probe)
Resolution	0.1 °C
Accuracy	± 0.3 °C @ T=0...+70 °C ± 0.4 °C @ T<0 °C and T>+70 °C
Stability	0.1 °C / year
Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz, 921.5-928 MHz or 915,9-929,7 MHz depending on the frequency in use in the country of installation
Transmission range	In open field (may be reduced in the presence of obstacles or adverse weather conditions): 180 m (E, U) to the HD35APD base unit 300 m (E, J) / 180 m (U) to other devices
Logging interval	1, 2, 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Power supply	Non rechargeable lithium thionyl chloride (Li-SOCl ₂) internal battery, 3.6 V, size A, 2-pole Molex 5264 connector
Battery life	2 years typical (without repeaters, measurement interval 5 s and log interval 30 s)
Operating conditions	-20...+70 °C / 0...85 %RH non condensing
Dimensions	135 x 102 x 33 mm (excluding the probes)
Weight	200 g approx.
Housing	ABS
Protection degree	IP 50

PROBES

TP35N1.../C: NTC temperature probe. Range -40...+105 °C. Ø5x40 mm AISI 316 tube. 4-pole M12 connector. Cable length 3 m (TP35N1.3/C), 5 m (TP35N1.5/C) or 10 m (TP35N1.10/C)



ORDERING CODES

HD35ED	N/3TC.	
		RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)
		LCD: Blank = without LCD L = with custom LCD

HD35EDNTV – HD35EDLNTV - TEMPERATURE WIRELESS DATA LOGGER WITH FIXED VERTICAL PROBE



Temperature wireless data logger. Custom LCD display (only with **option L**). It stores the measures in its internal memory (68,000 samples) and transmits the logged data to the base unit automatically at regular intervals or upon request.

Temperature fixed vertical probe with **NTC10KΩ** temperature sensor.

Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software or front keyboard (only version with LCD). Powered by the internal battery. Wall mount removable (by using the included support) or fixed (with optional flanges) installation.

TECHNICAL CHARACTERISTICS

Temperature	
Sensor	NTC 10 kΩ @ 25 °C
Measuring range	-40...+105 °C
Resolution	0.1 °C
Accuracy	±0.3 °C @ T=0...+70 °C ±0.4 °C @ T<0 °C and T>+70 °C
Stability	0.1 °C / year
Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz, 921.5-928 MHz or 915,9-929,7 MHz depending on the frequency in use in the country of installation
Transmission range	300 m (E, J)/ 180 m (U) in open field (can be reduced in presence of obstacles or adverse atmospheric conditions)
Logging interval	1, 2, 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Power supply	Non rechargeable lithium thionil chloride (Li-SOCl ₂) internal battery, 3.6 V, size A, 2-pole Molex 5264 connector
Battery life	2 years typical (without repeaters, measurement interval 5 s and log interval 30 s)
Operating conditions	-20...+70 °C / 0...85 %RH non condensing
Dimensions	135 x 144 x 33 mm
Weight	200 g approx.
Housing	Plastic material
Protection degree	IP 50

ORDERING CODES

HD35ED		NTV.	
			RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)
	LCD: Blank = without LCD L = with custom LCD		

HD35ED7P/...TC – HD35EDG7P/...TC - 1 OR 3-INPUT TEMPERATURE WIRELESS DATA LOGGER FOR Pt100/Pt1000 SENSOR TEMPERATURE PROBES WITH CABLE



Temperature wireless data logger. Graphic LCD display (only with **option G**). It stores the measures in its internal memory (from 42,000 to 68,000 samples depending on the number of inputs) and transmits the logged data to the base unit automatically at regular intervals or upon request.

Depending on the model, one or three inputs with M12 connector for temperature probes with **Pt100/Pt1000** sensor:

HD35ED7P/1 – HD35EDG7P/1: one input

HD35ED7P/3 – HD35EDG7P/3: three inputs

Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software or front keyboard (only version with LCD). Powered by the internal battery. Wall mount removable (by using the included support) or fixed (with optional flanges) installation.

TECHNICAL CHARACTERISTICS

Temperature	
Sensor	Pt100 / Pt1000
Measuring range	-200...+650 °C
Resolution	Configurable 0.1/0.01 °C
Accuracy	±0.1 °C plus the error of the connected probe
Stability	0.1 °C/year
Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz or 921.5-928 MHz depending on the frequency in use in the country of installation
Transmission range	300 m (E, J)/ 180 m (U) in open field (can be reduced in presence of obstacles or adverse atmospheric conditions)
Logging interval	1 ^(*) , 2 ^(**) , 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Power supply	Non rechargeable lithium thionil chloride (Li-SOCl ₂) internal battery, 3.6 V, size A, 2-pole Molex 5264 connector
Battery life	2 years typ. (without repeaters, measurement interval 10 s and log interval 30 s)
Operating conditions	-20...+70 °C / 0...85 %RH non condensing
Dimensions	135 x 102 x 33 mm (excluding the probes)
Weight	200 g approx.
Housing	Plastic material
Protection degree	IP 50

(*) Recording 1 input - (**) Recording 2 inputs

PROBES

TP35.1..../C: 4-wire 1/3 DIN **Pt1000** temperature probe. Range -50...+105 °C. Ø5x40 mm AISI 316 tube. Cable ending with 4-pole M12 connector. Cable length 3 m (TP35.1.3/C), 5 m (TP35.1.5/C) or 10 m (TP35.1.10/C).



TP35.2..../C: 4-wire 1/3 DIN **Pt1000** temperature probe. Range -40...+105 °C. Ø5x20 mm thermoplastic rubber tube. Suitable for use with chemically aggressive solutions as well. Cable ending with 4-pole M12 connector. Cable length 3 m (TP35.2.3/C) or 5 m (TP35.2.5/C).



TP35.4..../C: 4-wire 1/3 DIN **Pt100** temperature probe. Range -50...+105 °C. Ø6x50 mm AISI 316 tube. Cable ending with 4-pole M12 connector. Cable length 3 m (TP35.4.3/C) or 5 m (TP35.4.5/C).



ORDERING CODES

HD35ED		7P/		TC.	
					RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)
					NUMBER OF INPUTS: 1 = 1 input 3 = 3 inputs
					LCD: Blank = without LCD L = with custom LCD

HD35ED1NTC – HD35EDL1NTC - TEMPERATURE AND HUMIDITY WIRELESS DATA LOGGER FOR T/RH COMBINED PROBE WITH CABLE



Temperature and humidity wireless data logger. Custom LCD display (only with **option L**). It stores the measures in its internal memory (24,000 samples) and transmits the logged data to the base unit automatically at regular intervals or upon request.

One input with M12 connector for the **HP3517WTC...** temperature and relative humidity combined probe (**NTC10K Ω** temperature sensor).

Calculated quantities: dew point, wet bulb temperature, absolute humidity, mixing ratio, partial vapour pressure.

Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software or front keyboard (only version with LCD). Powered by the internal battery. Wall mount removable (by using the included support) or fixed (with optional flanges) installation.

TECHNICAL CHARACTERISTICS

Humidity	
Sensor	Capacitive
Measuring range	0...100% RH
Resolution	0.1% RH
Accuracy	$\pm 1.8\% \text{ RH @ (RH=0...85\%, T=15...35 } ^\circ\text{C)}$ $\pm 2.5\% \text{ RH @ (RH=85...100\%, T=15...35 } ^\circ\text{C)}$ $\pm (2 + 1.5\% \text{ meas.})\% \text{ @ T=remaining range}$
Sensor operating temperature	-20...+80 $^\circ\text{C}$
Response time	$T_{63} < 10 \text{ s (10} \rightarrow 80\% \text{ @T const., air speed 2 m/s, with filter)}$
Stability	1% / year(in the whole temperature and RH range)
Temperature	
Sensor	NTC 10 k Ω @ 25 $^\circ\text{C}$
Measuring range	-40...+105 $^\circ\text{C}$
Resolution	0.1 $^\circ\text{C}$
Accuracy	$\pm 0.3\text{ } ^\circ\text{C @ T=0...+70 } ^\circ\text{C}$ $\pm 0.4\text{ } ^\circ\text{C @ T<0 } ^\circ\text{C and T>+70 } ^\circ\text{C}$
Long-term stability	0.1 $^\circ\text{C / year}$
Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz, 921.5-928 MHz or 915,9-929,7 MHz depending on the frequency in use in the country of installation
Transmission range	300 m (E, J)/ 180 m (U) in open field (can be reduced in presence of obstacles or adverse atmospheric conditions)
Logging interval	1, 2, 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Power supply	Non rechargeable lithium thionyl chloride (Li-SOCl ₂) internal battery, 3.6 V, size A, 2-pole Molex 5264 connector
Battery life	2 years typical (without repeaters, measurement interval 5 s and log interval 30 s)
Operating conditions	-20...+70 $^\circ\text{C}$ / 0...85 %RH non condensing
Weight	200 g approx.
Housing	ABS
Protection degree	IP 50

PROBES

HP3517W... Temperature and relative humidity combined probe. R.H. sensor measuring range: 0...100%. NTC temperature sensor. Ø14 mm. Filter in PBT and stainless steel grid. 4-pole M12 connector.



HP3517W	.	
		Cable length: 2 = 2 m 5 = 5 m 10 = 10 m
Stem length and material: TC1 = 135 mm in PBT TC2 = 150 mm in AISI 304 TC3 = 335 mm in PBT		

TP35N1.../C: NTC temperature probe. Range -40...+105 °C. Ø5x40 mm AISI 316 tube. 4-pole M12 connector. Cable length 3 m (TP35N1.3/C), 5 m (TP35N1.5/C) or 10 m (TP35N1.10/C)



ORDERING CODES

HD35ED	1NTC.	
		RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)
LCD: Blank = without LCD L = with custom LCD		

HD35ED1NTV – HD35EDL1NTV - TEMPERATURE AND HUMIDITY WIRELESS DATA LOGGER WITH T/RH FIXED VERTICAL PROBE



Temperature and humidity wireless data logger. Custom LCD display (only with **option L**). It stores the measures in its internal memory (24,000 samples) and transmits the logged data to the base unit automatically at regular intervals or upon request.

Temperature and relative humidity fixed vertical probe (**NTC10K Ω** temperature sensor).

Calculated quantities: dew point, wet bulb temperature, absolute humidity, mixing ratio, partial vapour pressure.

Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software or front keyboard (only version with LCD). Powered by the internal battery. Wall mount removable (by using the included support) or fixed (with optional flanges) installation.

TECHNICAL CHARACTERISTICS

Humidity	
Sensor	Capacitive
Measuring range	0...100% RH
Resolution	0.1% RH
Accuracy	± 1.8 %RH @ (RH=0...85%, T=15...35 °C) ± 2.5 %RH @ (RH=85...100%, T=15...35 °C) ± (2 + 1.5% meas.)% @ T=remaining range
Sensor operating temperature	-20...+80 °C
Response time	T ₆₃ <10 s (10→80% @T const., air speed 2 m/s, with filter)
Stability	1% / year (in the whole temperature and RH range)
Temperature	
Sensor	NTC 10 kΩ @ 25 °C
Measuring range	-40...+105 °C
Resolution	0.1 °C
Accuracy	±0.3 °C @ T=0...+70 °C ±0.4 °C @ T<0 °C and T>+70 °C
Long-term stability	0.1 °C / year
Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz, 921.5-928 MHz or 915,9-929,7 MHz depending on the frequency in use in the country of installation
Transmission range	In open field (it can decrease in the presence of obstacles or adverse weather conditions): 180 m (E, U) towards base unit HD35APD. 300 m (E, J)/ 180 m (U) towards other devices
Logging interval	1, 2, 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Power supply	Non rechargeable lithium thionyl chloride (Li-SOCl ₂) internal battery, 3.6 V, size A, 2-pole Molex 5264 connector
Battery life	2 years typical (without repeaters, measurement interval 5 s and log interval 30 s)
Operating conditions	-20...+70 °C / 0...85 %RH non condensing
Weight	200 g approx.
Housing	ABS
Protection degree	IP 50

ORDERING CODES

HD35ED		1NTV.	
			RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)

LCD:
Blank = without LCD
L = with custom LCD

HD35ED1[4b]NTVI – HD35EDL1NTVI - HD35EDG1[4b]NTVI – TEMPERATURE, HUMIDITY [OPTIONALLY BAROMETRIC PRESSURE] WIRELESS DATA LOGGER WITH FIXED VERTICAL PROBE



Temperature and humidity wireless data logger. Optionally with barometric pressure as well. Custom LCD display (**option L**) or graphic (**option G – with barometric pressure**). It stores the measures in its internal memory (24,000 samples – 22,000 samples models with pressure measurement) and transmits the logged data to the base unit automatically at regular intervals or upon request.

Temperature and relative humidity fixed vertical probe (temperature sensor integrated in the R.H. module).

Calculated quantities: dew point, wet bulb temperature, absolute humidity, mixing ratio, partial vapour pressure.

Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software or front keyboard (only version with LCD). Powered by the internal battery. Wall mount removable (by using the included support) or fixed (with optional flanges) installation.

TECHNICAL CHARACTERISTICS

Humidity	
Sensor	Capacitive
Measuring range	0...100% RH
Resolution	0.1% RH
Accuracy (@ 23 °C)	± 2.5 %RH (0..85 %RH) ± 3.5 %RH (85...100 %RH)
Temperature drift	0.05 %RH/K (0...60 °C)
Sensor operating temperature	-40...+105 °C (R.H. max=[100-2*(T-80)] @ T=80...105 °C)
Response time	T ₆₃ < 6 s (10→80% @T const., air speed 2 m/s, with filter)
Stability	< 1%/year (@ 23 °C and 30...70 %RH)
Temperature	
Sensor	PTAT integrated in humidity module
Measuring range	-40...+105 °C
Resolution	0.1 °C
Accuracy	± 0.2 °C in the range 0...+60 °C ± (0.2 – 0.05 * T) °C in the range T=-40...0 °C ± [0.2 + 0.032 * (T-60)] °C in the range T=+60...+105 °C
Long-term stability	0.05 °C / year
Atmospheric Pressure	
Sensor	Piezoresistive
Measuring range	300...1100 hPa
Resolution	0.1 hPa
Accuracy	±0.5 hPa (700...1100 hPa) @T=20 °C ±1 hPa (500...1100 hPa) / ±1.5 hPa (300...500 hPa) @T=0...60 °C
Stability	±1 hPa/year
Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz, 921.5-928 MHz or 915,9-929,7 MHz depending on the frequency in use in the country of installation
Transmission range	In open field (it can decrease in the presence of obstacles or adverse weather conditions): 180 m (E, U) towards base unit HD35APD. 300 m (E, J)/ 180 m (U) towards other devices
Logging interval	1, 2, 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Power supply	Non rechargeable lithium thionil chloride (Li-SOCl ₂) internal battery, 3.6 V, size A, 2-pole Molex 5264 connector
Battery life	2 years typical (without repeaters, measurement interval 5 s and log interval 30 s)
Operating conditions	-20...+70 °C / 0...85 %RH non condensing
Weight	200 g approx.
Housing	ABS
Protection degree	IP 50

ORDERING CODES

HD35ED		1		NTVI.	
					RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)
					PRESSURE OPTION Blank = without atmospheric pressure 4b = with atmospheric pressure
					LCD: Blank = without LCD L = with custom LCD (model without atmospheric pressure) G = with graphic LCD (model with atmospheric pressure)

HD35ED17PTC – HD35EDL17PTC - TEMPERATURE AND HUMIDITY WIRELESS DATA LOGGER FOR T/RH COMBINED PROBE WITH CABLE



Temperature and humidity wireless data logger. Custom LCD display (only with **option L**). It stores the measures in its internal memory (24,000 samples) and transmits the logged data to the base unit automatically at regular intervals or upon request.

One input with M12 connector for the **HP3517ETC...** temperature and relative humidity combined probe (**Pt100** temperature sensor).

Calculated quantities: dew point, wet bulb temperature, absolute humidity, mixing ratio, partial vapour pressure.

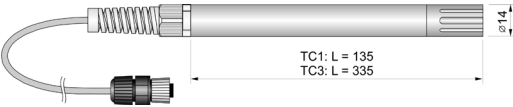
Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software or front keyboard (only version with LCD). Powered by the internal battery. Wall mount removable (by using the included support) or fixed (with optional flanges) installation.

TECHNICAL CHARACTERISTICS

Humidity	
Sensor	Capacitive
Measuring range	0...100% RH
Resolution	0.1% RH
Accuracy	±1.8% (0...85%) / ±2.5% (85...100%) @ T=15...35 °C ±(2 + 1.5% della misura)% @ T=rremaining range
Sensor operating temperature	-40...+150 °C
Response time	T ₆₃ < 10 s (10→80% @T const., air speed 2 m/s, with filter)
Stability	1% / year (in the whole temperature and RH range)
Temperature	
Sensor	Pt100 / Pt1000
Measuring range	-40...+150°C
Resolution	Configurable 0.1/0.01 °C
Accuracy	±0.1 °C plus the error of the connected probe
Stability	0.1 °C/year
Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz or 921.5-928 MHz depending on the frequency in use in the country of installation
Transmission range	300 m (E, J)/ 180 m (U) in open field (can be reduced in presence of obstacles or adverse atmospheric conditions)
Logging interval	1, 2, 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Power supply	Non rechargeable lithium thionil chloride (Li-SOCl ₂) internal battery, 3.6 V, size A, 2-pole Molex 5264 connector
Battery life	2 years typical (without repeaters, measurement interval 5 s and log interval 30 s)
Operating conditions	-20...+70 °C / 0...85 %RH non condensing
Weight	200 g approx.
Housing	ABS
Protection degree	IP 50

PROBES

HP3517E... Temperature and relative humidity combined probe. R.H. sensor measuring range: 0...100%. Pt100 temperature sensor. Ø14 mm. Filter in PBT and stainless steel grid. 8-pole M12 connector.



HP3517E	.	
		Cable length: 2 = 2 m 5 = 5 m 10 = 10 m
		Stem length and material: TC1 = 135 mm in PBT TC2 = 150 mm in AISI 304 TC3 = 335 mm in PBT

Note: the Pt100/Pt1000 probes (4-pole M12 connector) cannot be connected to the input for HP3517ETC... temperature and relative humidity combined probes (8-pole M12 connector).

ORDERING CODES

HD35ED		17PTC.	
			RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)
			LCD: Blank = without LCD L = with custom LCD

HD35ED1NB – HD35EDG1NB - TEMPERATURE, HUMIDITY AND CARBON DIOXIDE (CO₂) WIRELESS DATA LOGGER



Temperature, humidity and carbon dioxide wireless data logger. Graphic LCD display (only with **option G**). It stores the measures in its internal memory (44,000 samples) and transmits the logged data to the base unit automatically at regular intervals or upon request.

The sensors are all inside the housing.

Calculated quantities: dew point, wet bulb temperature, absolute humidity, mixing ratio, partial vapour pressure.

Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software or front keyboard (only version with LCD). Powered by the internal battery. Wall mount removable (by using the included support) or fixed (with optional flanges) installation.

TECHNICAL CHARACTERISTICS

Humidity	
Sensor	Capacitive
Measuring range	0...100%
Resolution	0.1%
Accuracy@ T=23 °C	±2.5% (0..85%) / ±3.5% (85...100%)
Temperature drift	0.05%/K (0..60 °C)
Sensor operating temperature	-40...+105 °C (R.H. max=[100-2*(T-80)] @ T=80...105 °C)
Response time	T63 < 6 s (10→80% @T const., air speed 2 m/s, with filter)
Stability	<1%/year (@ 23 °C and 30...70 %RH)
Temperature	
Sensor	PTAT integrated in humidity module
Measuring range	-40...+105 °C
Resolution	0.1 °C
Accuracy	±0.2 °C @ T=0...+60 °C ±(0.2 - 0.05 * T) °C @ T=-40...0 °C ±[0.2 + 0.032 * (T-60)] °C @ T=+60...+105 °C
Long-term stability	0.05 °C/year
Carbon dioxide (CO₂)	
Sensor	Non-dispersive infrared rays (NDIR)
Measuring range	0...5000 ppm
Resolution	1 ppm
Accuracy	±(50 ppm+3% of measurement) @ 25 °C and 1013 hPa
Operating conditions	0...50 °C / 0...95%RH non-condensing / 950...1050 hPa
Response time	T ₉₀ < 120 s (air speed= 2 m/s)
Calibration interval	>5 years (under normal operating conditions)
Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz or 915,9-929,7 MHz depending on the frequency in use in the country of installation
Transmission range	300 m (E, J) / 180 m (U) in open field (can be reduced in presence of obstacles or adverse atmospheric conditions)
Logging interval	10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Power supply	Non rechargeable lithium thionyl chloride (Li-SOCl ₂) internal battery, 3.6 V, size A, 2-pole Molex 5264 connector
Battery life	1,5 years typical with t _{meas} and t _{log} 2 min
Operating conditions	-10...+70 °C / 0...85 %RH non condensing
Weight	200 g approx.
Housing	ABS
Protection degree	IP 30

ORDERING CODES

HD35ED		1NB	
			RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)
			LCD: Blank = without LCD G = with graphic LCD

HD35ED4r1Z – HD35EDL4r1Z – DIFFERENTIAL PRESSURE WIRELESS DATA LOGGER – AUTOMATIC CALIBRATION



Differential pressure wireless data logger for clean rooms. With automatic calibration of the differential pressure at zero. Custom LCD display (only with **option L**). It stores the measures in its internal memory (68,000 samples) and transmits the logged data to the base unit automatically at regular intervals or upon request.

Pressure inputs Ø 5.5 mm for tubes Ø 5 mm.

Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software or front keyboard (only version with LCD). Powered by the internal battery. Wall mount removable (by using the included support) or fixed (with optional flanges) installation.

TECHNICAL CHARACTERISTICS

Differential Pressure	
Sensor	Piezoresistive
Measuring range	±100 Pa
Resolution	0.1 Pa
Accuracy	±(0.8% of measure + 0.5) Pa @ 0...50 °C
Stability	±0.2 Pa with zero self-calibration
Overpressure limit	50 kPa
Compatible media	Only air and non-aggressive dry gases
Pressure inputs	Ø 5.5 mm
Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz, 921.5-928 MHz or 915,9-929,7 MHz depending on the frequency in use in the country of installation
Transmission range	300 m (E, J)/ 180 m (U) in open field (can be reduced in presence of obstacles or adverse atmospheric conditions)
Logging interval	1, 2, 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Power supply	3 x AA alkaline batteries
Battery life	1,5 years typical with t_{meas} and t_{log} 30 s
Operating conditions	-20...+70 °C / 0...85 %RH non condensing
Weight	200 g approx.
Housing	ABS
Protection degree	IP 50

ORDERING CODES

HD35ED		4r1Z.	
			RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)
	LCD: Blank = without LCD L = with custom LCD		

HD35ED4r... – HD35EDL4r...– DIFFERENTIAL PRESSURE WIRELESS DATA LOGGER



Differential pressure wireless data logger. Custom LCD display (only with **option L**). It stores the measures in its internal memory (68,000 samples) and transmits the logged data to the base unit automatically at regular intervals or upon request.

Pressure inputs $\varnothing$ 5.5 mm for tubes $\varnothing$ 5 mm.

Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software or front keyboard (only version with LCD). Powered by the internal battery. Wall mount removable (by using the included support) or fixed (with optional flanges) installation.

TECHNICAL CHARACTERISTICS

Differential pressure	
Sensor	Piezo-resistive
Measuring range	4r1: $\pm 2,5$ hPa 4r2: ± 10 hPa 4r3: ± 100 hPa 4r4: ± 2000 hPa
Resolution	4r1: 0.001 hPa 4r2: 0.005 hPa 4r3: 0.05 hPa 4r4: 1 hPa
Accuracy	$\pm 1\%$ f.s.
Overpressure limit	4r1/4r2/4r3: 50 kPa 4r4: 400 kPa
Compatible media	Only air and non-aggressive dry gases
Pressure inputs	$\varnothing$ 5.5 mm
Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz, 921.5-928 MHz or 915,9-929,7 MHz depending on the frequency in use in the country of installation
Transmission range	300 m (E, J)/ 180 m (U) in open field (can be reduced in presence of obstacles or adverse atmospheric conditions)
Logging interval	1, 2, 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Power supply	Non rechargeable lithium thionyl chloride (Li-SOCl ₂) internal battery, 3.6 V, size A, 2-pole Molex 5264 connector
Battery life	2 years typical with tmeas and tlog 30 s
Operating conditions	-20...+70 °C / 0...85 %RH non condensing
Weight	200 g approx.
Housing	ABS
Protection degree	IP 50

ORDERING CODES

HD35ED		4r		.	
					RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)
					MEASURING RANGE: 1 = $\pm 2,5$ hPa 2 = ± 10 hPa 3 = ± 100 hPa 4 = ± 2000 hPa
					LCD: Blank = without LCD L = with custom LCD

HD35ED1N4r1ZTV... – HD35EDL1N4r1ZTV... – TEMPERATURE, HUMIDITY AND DIFFERENTIAL PRESSURE WIRELESS DATA LOGGER WITH FIXED T/RH VERTICAL PROBE – AUTOMATIC CALIBRATION

Temperature, humidity and differential pressure wireless data logger for clean rooms. With automatic calibration of the differential pressure at zero. Custom LCD display (only with **option L**). It stores the measures in its internal memory (22,000 samples) and transmits the logged data to the base unit automatically at regular intervals or upon request. Temperature and relative humidity fixed vertical probe (**NTC10K Ω** temperature sensor).



Pressure inputs $\varnothing$ 5.5 mm for tubes $\varnothing$ 5 mm.

Calculated quantities: dew point, wet bulb temperature, absolute humidity, mixing ratio, partial vapour pressure.

Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software or front keyboard (only version with LCD). Powered by the internal battery. Wall mount removable (by using the included support) or fixed (with optional flanges) installation.

TECHNICAL CHARACTERISTICS

Humidity	
Sensor	Capacitive
Measuring range	0...100% RH
Resolution	0.1% RH
Accuracy	± 1.8 %RH @ (RH=0...85%, T=15...35 °C) ± 2.5 %RH @ (RH=85...100%, T=15...35 °C) $\pm (2 + 1.5\% \text{ meas.})\%$ @ T=remaining range
Sensor operating temp.	-20...+80 °C
Response time	T ₆₃ < 10 s (10→80% @T const., air speed 2 m/s, with filter)
Stability	1% / year (in the whole temperature and RH range)
Temperature	
Sensor	NTC 10 k Ω @ 25 °C
Measuring range	-40...+105 °C
Resolution	0.1 °C
Accuracy	± 0.3 °C in the range 0...+70 °C ± 0.4 °C @ T<0 °C and T>+70 °C
Stability	0.1 °C / year
Differential Pressure	
Sensor	Piezoresistive
Measuring range	± 100 Pa
Resolution	0.1 Pa
Accuracy	$\pm (0.8\% \text{ of measure} + 0.5)$ Pa @ 0...50 °C
Stability	± 0.2 Pa with zero self-calibration
Overpressure limit	50 kPa
Compatible media	Only air and non-aggressive dry gases
Pressure inputs	$\varnothing$ 5.5 mm
Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz, 921.5-928 MHz or 915,9-929,7 MHz depending on the frequency in use in the country of installation
Transmission range	300 m (E, J)/ 180 m (U) in open field (can be reduced in presence of obstacles or adverse atmospheric conditions)
Logging interval	1, 2, 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Power supply	3 x AA alkaline batteries
Battery life	1,5 years typical with t _{meas} and t _{log} 30 s
Operating conditions	-20...+70 °C / 0...85 %RH non condensing
Weight	200 g approx.
Housing	ABS
Protection degree	IP 50

ORDERING CODES

HD35ED		1N4r1Z.	
			RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)
	LCD: Blank = without LCD L = with custom LCD		

HD35ED1N4r...TV... – HD35EDL1N4r...TV... – TEMPERATURE, HUMIDITY AND DIFFERENTIAL PRESSURE WIRELESS DATA LOGGER WITH FIXED T/RH VERTICAL PROBE



Temperature, humidity and differential pressure wireless data logger. Custom LCD display (only with **option L**). It stores the measures in its internal memory (22,000 samples) and transmits the logged data to the base unit automatically at regular intervals or upon request. Temperature and relative humidity fixed vertical probe (**NTC10K Ω** temperature sensor). Pressure inputs $\varnothing$ 5.5 mm for tubes $\varnothing$ 5 mm.

Calculated quantities: dew point, wet bulb temperature, absolute humidity, mixing ratio, partial vapour pressure.

Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software or front keyboard (only version with LCD). Powered by the internal battery. Wall mount removable (by using the included support) or fixed (with optional flanges) installation.

TECHNICAL CHARACTERISTICS

Humidity	
Sensor	Capacitive
Measuring range	0...100% RH
Resolution	0.1% RH
Accuracy	± 1.8 %RH @ (RH=0...85%, T=15...35 °C) ± 2.5 %RH @ (RH=85...100%, T=15...35 °C) $\pm (2 + 1.5\% \text{ meas.})\%$ @ T=remaining range
Sensor operating temp.	-20...+80 °C
Response time	T ₆₃ < 10 s (10→80% @T const., air speed 2 m/s, with filter)
Stability	1% / year (in the whole temperature and RH range)
Temperature	
Sensor	NTC 10 k Ω @ 25 °C
Measuring range	-40...+105 °C
Resolution	0.1 °C
Accuracy	± 0.3 °C in the range 0...+70 °C ± 0.4 °C @ T<0 °C and T>+70 °C
Stability	0.1 °C / year
Diff. pressure	
Sensor	Piezo-resistive
Measuring range	r1: ± 2.5 hPa r2: ± 10 hPa r3: ± 100 hPa r4: ± 2000 hPa
Resolution	r1: 0.001 hPa r2: 0.005 hPa r3: 0.05 hPa r4: 1 hPa
Accuracy	$\pm 1\%$ f.s.
Overpressure limit	4r1/4r2/4r3: 50 kPa 4r4: 400 kPa
Compatible media	Only air and non-aggressive dry gases
Pressure inputs	$\varnothing$ 5.5 mm
Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz, 921.5-928 MHz or 915,9-929,7 MHz depending on the frequency in use in the country of installation
Transmission range	300 m (E, J)/ 180 m (U) in open field (can be reduced in presence of obstacles or adverse atmospheric conditions)
Logging interval	1, 2, 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Power supply	Non rechargeable lithium thionil chloride (Li-SOCl ₂) internal battery, 3.6 V, size A, 2-pole Molex 5264 connector
Battery life	2 years typical with tmeas and tlog 30 s
Operating conditions	-20...+70 °C / 0...85 %RH non condensing
Weight	200 g approx.
Housing	ABS
Protection degree	IP 50

ORDERING CODES

HD35ED		1N4r		TV.	
					RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)
					MEASURING RANGE: 1 = ±2,5 hPa 2 = ±10 hPa 3 = ±100 hPa 4 = ±2000 hPa
					LCD: Blank = without LCD L = with custom LCD

HD35ED1NITV... – HD35EDL1NITV... – TEMPERATURE, HUMIDITY AND ILLUMINANCE WIRELESS DATA LOGGER WITH FIXED T/RH VERTICAL PROBE



Temperature, humidity and illuminance wireless data logger. Custom LCD display (only with **option L**). It stores the measures in its internal memory (44,000 samples) and transmits the logged data to the base unit automatically at regular intervals or upon request.

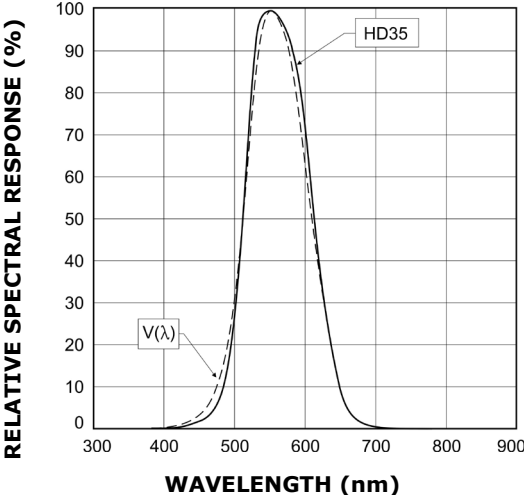
Temperature and relative humidity fixed vertical probe (**NTC10K Ω** temperature sensor). Integrated illuminance probe.

Calculated quantities: dew point, wet bulb temperature, absolute humidity, mixing ratio, partial vapour pressure.

Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software or front keyboard (only version with LCD). Powered by the internal battery. Wall mount removable (by using the included support) or fixed (with optional flanges) installation.

TECHNICAL CHARACTERISTICS

Humidity	
Sensor	Capacitive
Measuring range	0...100% RH
Resolution	0.1% RH
Accuracy	$\pm 1.8\% \text{ RH}$ @ (RH=0...85%, T=15...35 °C) $\pm 2.5\% \text{ RH}$ @ (RH=85...100%, T=15...35 °C) $\pm (2 + 1.5\% \text{ meas.})\%$ @ T=remaining range
Sensor operating temp.	-20...+80 °C
Response time	T63 < 10 s (10→80% @T const., air speed 2 m/s, with filter)
Stability	1%/year (in the whole temperature and RH range)
Temperature	
Sensor	NTC 10 k Ω @ 25 °C
Measuring range	-40...+105 °C
Resolution	0.1 °C
Accuracy	$\pm 0.3\text{ °C}$ in the range 0...+70 °C $\pm 0.4\text{ °C}$ @ T<0 °C and T>+70 °C
Stability	0.1 °C / year
Illuminance	
Sensor	Photodiode
Measuring range	0...20,000 lux
Resolution	1 lux (0...2,000 lux), 10 lux (>2,000 lux)
Spectral range	In accordance with standard photopic curve V(λ)
α (temperature coefficient) f6(T)	<0.05% K
Calibration uncertainty	<4%
f'1 (accordance with photopic response V(λ))	<6%
f2 (response as cosine law)	<3%
f3 (linearity)	<1%
f4 (instrument reading error)	<0.5%
f5 (fatigue)	<0.5%
Class	B
One year drift	<1%
Operating temperature	0...50 °C
Reference standard	CIE n°69 – UNI 11142

Spectral response	 The graph shows the relative spectral response of the HD35 instrument. The x-axis represents wavelength in nanometers (nm) from 300 to 900. The y-axis represents relative spectral response in percent (%) from 0 to 100. A solid line labeled HD35 shows a sharp peak at approximately 550 nm, reaching nearly 100% response. A dashed line labeled V(λ) represents the human photopic vision curve, which peaks at the same wavelength but with a lower response of about 95%.
Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz or 921.5-928 MHz depending on the frequency in use in the country of installation
Transmission range	300 m (E, J)/ 180 m (U) in open field (can be reduced in presence of obstacles or adverse atmospheric conditions)
Logging interval	1, 2, 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Power supply	Non rechargeable lithium thionyl chloride (Li-SOCl ₂) internal battery, 3.6 V, size A, 2-pole Molex 5264 connector
Battery life	2 years typical (without repeaters, measurement interval 5 s and log interval 30 s)
Operating conditions	-20...+70 °C / 0...85 %RH non condensing
Weight	200 g approx.
Housing	ABS
Protection degree	IP 50

ORDERING CODES

HD35ED		1NITV.	
			RADIO FREQUENCY: E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand) The option J (Japan) is not available
		LCD: Blank = without LCD L = with custom LCD	

HD35EDH... – HD35EDGH... – TERMINAL HEADER INPUTS FOR STANDING ANALOG SENSOR



Wireless data logger with three terminal header inputs for the connection of transmitters with 4÷20 mA, 0÷1 V or 0÷50 mV output, Pt100/Pt1000 sensors, K, J, T, N, E thermocouples, sensors with voltage free contact output (max. one sensor) and potentiometric sensors.

Graphic LCD display (only with **option G**). It stores the measures in its internal memory (from 36,000 to 68,000 samples depending on the number and type of connected sensors) and transmits the logged data to the base unit automatically at regular intervals or upon request.

Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software or front keyboard (only version with LCD). Powered by the internal battery. Wall mount removable (by using the included support) or fixed (with optional flanges) installation.

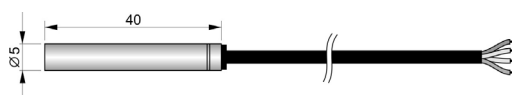
TECHNICAL CHARACTERISTICS

Pt100/Pt1000	
Measuring range	-200...+650 °C
Resolution	0.1 °C
Accuracy	± 0.1 °C (excluding probe error)
Sensor coefficient	$\alpha=0.00385\text{ }^{\circ}\text{C}^{-1}$
Connection	2, 3 or 4 wires
Thermocouple	
Thermocouple type	K, J, T, N, E (inputs not isolated, use thermocouples with isolated hot junction)
Measuring range	K: -200...+1370 °C J: -100...+750 °C E: -200...+750 °C T: -200...+400 °C N: -200...+1300 °C
Resolution	0.1 °C
Accuracy (excluding probe error)	K: ± 0.1°C (< 600°C) E: ± 0.1°C (< 300°C) ± 0.2°C (> 600°C) ± 0.2°C (> 300°C) N: ± 0.1°C (< 600°C) J: ± 0.1°C ± 0.2°C (> 600°C) T: ± 0.1°C
Current input	
Input range	0...20 mA or 4...20 mA
Shunt resistance	Internal (50 Ω)
Resolution	16 bit
Accuracy	±2 µA
Voltage input	
Input range	0...50 mV, 0...1 V
Input Resistance	100 MΩ
Resolution	16 bit
Accuracy	±0.01% f.s.
Inputs for counting the switchings of a voltage-free contact	
Switching frequency	50 Hz max.
Hold Time	10 ms min.
Potentiometer input	
Value	Typical 10 kΩ
Resolution	16 bit
Accuracy	± 0.01% f.s.

Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz o 921.5-928 MHz depending on the frequency in use in the country of installation
Transmission range	300 m (E, J)/ 180 m (U) in open field (can be reduced in presence of obstacles or adverse atmospheric conditions)
Logging interval	5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Power supply	Non rechargeable lithium thionil chloride (Li-SOCl ₂) internal battery, 3.6 V, size A, 2-pole Molex 5264 connector
Battery life	2 years typical with t _{meas} 10 s and t _{log} 30 s
Operating conditions	-20...+70 °C / 0...85 %RH non condensing
Weight	200 g approx.
Housing	ABS
Protection degree	IP50

PROBES

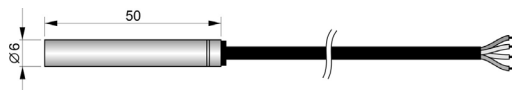
TP35.1....: 4-wire 1/3 DIN **Pt1000** temperature probe. Range -50...+105 °C. Ø5x40 mm AISI 316 tube. Cable ending with free wires. Cable length 3 m (TP35.1.3), 5 m (TP35.1.5) or 10 m (TP35.1.10).



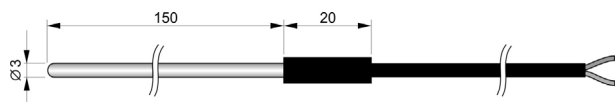
TP35.2....: 4-wire 1/3 DIN **Pt1000** temperature probe. Range -40...+105 °C. Ø5x20 mm thermoplastic rubber tube. Suitable for use with chemically aggressive solutions as well. Cable ending with free wires. Cable length 3 m (TP35.2.3) or 5 m (TP35.2.5)



TP35.4....: 4-wire 1/3 DIN **Pt100** temperature probe. Range -50...+105 °C. Ø6x50 mm AISI 316 tube. Cable ending with free wires. Cable length 3 m (TP35.4.3) or 5 m (TP35.4.5).



TP35K6.5: K-thermocouple temperature probe. Isolated junction. Class 1 according to IEC 60584-1. Range -50...+750 °C. Ø3x150 mm AISI 316 tube. Cable length 5 m. Cable ending with free wires.



ORDERING CODES

HD35ED	H.	
		RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)
		LCD: Blank = without LCD G = with custom graphic display

6 Indoor Models – Accessories

CODE	Description	
SWD06	100-240 Vac / 6 Vdc - 1 A mains power adapter.	
CP23	Direct USB connection cable with male mini-USB connector on the instrument side and male A type USB connector on the PC side. Cable length 1.5 m.	
CP31	Direct USB connection cable with male mini-USB connector on the instrument side and male A type USB connector on the PC side. Cable length 1.5 m.	
HD35.03	Spare plastic support for the removable installation of base unit, repeaters and data loggers. Except HD35APD and HD35APR.	
HD35.11K	Pair of flanges made of anodized aluminium alloy for the fixed installation of base unit, repeaters and data loggers. Pin for padlock. Except HD35APD and HD35APR.	
HD35-ANT	Spare external RF antenna for the base units HD35AP... and the repeater HD35RE.	
HD35-ANTGSM	Spare GSM antenna. For HD35APG.	
HD35-ANT3G	Spare 3G antenna. For HD35AP3G.J.	
HD35-BAT1	Spare 3.6 V lithium-ion rechargeable battery, capacity 2250 mA/h, 3-pole JST connector. For HD35AP... and HD35RE.	
HD75	75%RH saturated solution for checking the relative humidity sensor, complete with screw adaptor for probes Ø 14 mm, M12×1 thread.	
HD33	33%RH saturated solution for checking the relative humidity sensor, complete with screw adaptor for probes Ø 14 mm, M12×1 thread.	
HD11	11%RH saturated solution for checking the relative humidity sensor, complete with screw adaptor for probes Ø 14 mm, M12×1 thread.	
HD35TVI	Spare fixed vertical combined relative humidity and temperature probe for ... TVI models.	
	SOFTWARE	
HD35AP-CFR21	Advanced version of the HD35AP-S and HDServer1 software for the management of the data logging system in accordance with the FDA 21 CFR part 11 recommendations : traceability of activities (audit trail) performed with the software and management of users' access for the system configuration and viewing of data in the database. It works with USB hardware key (included).	

7 Outdoor Models – Access Points & Repeaters

HD35APGMT / HD35AP3GMT / HD35AP4GMT – CELLULAR BASE UNITS WITH USB OUTPUT AND INTEGRATED 4G/3G/GSM/GPRS MODULE



The device acts as an interface between the network data loggers that are positioned in the measurement sites, and the PC. It receives via wireless the data acquired by the remote data loggers and communicate with the PC via the **USB** output or the **4G/3G/GSM/GPRS** connection. Does not require the installation of USB drivers.

The integrated **4G/3G/GSM/GPRS** module allows **e-mail** or **SMS** alarm transmission and stored data transmission via **e-mail**, to an **FTP** address or to an HTTP server (**Cloud**). SMS messages containing commands can be sent by a mobile phone to the base unit, to change some cellular settings of the unit.

18...27 Vdc power supply (also from a 12 V solar panel). The unit includes an internal 12 V rechargeable lead battery and a charge regulator.

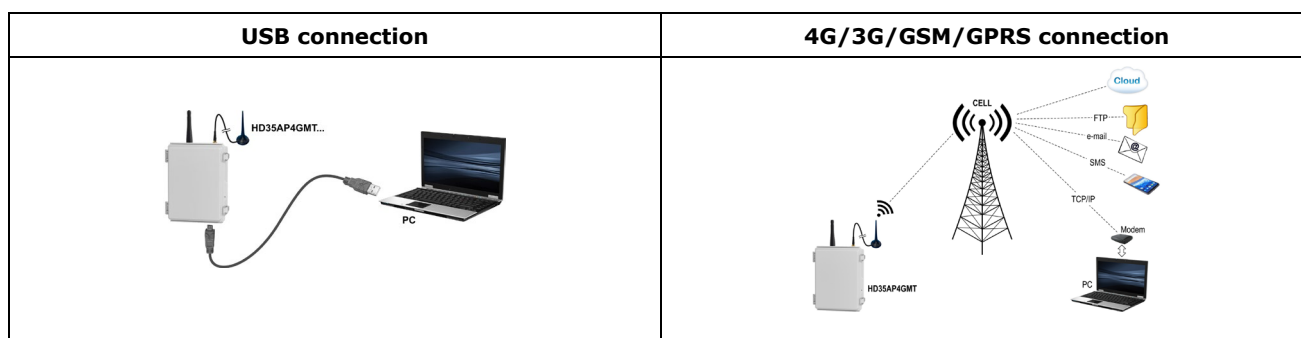
If the PC is not connected, the internal memory allows the storage of the measurement data received from the data loggers (the memory is managed in circular mode: when the memory is full, the oldest data are overwritten by the new ones).

Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software. Fixing to a Ø 60 mm max. mast (**fixing accessories included**).

TECHNICAL CHARACTERISTICS

Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz or 921.5-928 MHz depending on the frequency in use in the country of installation
Transmission range	In open field: 300 m (E, J)/ 180 m (U) towards data loggers with internal antenna. > 500 m (E, J, U) towards repeaters and data loggers with external antenna. (can be reduced in presence of obstacles or adverse atmospheric conditions)
Power supply	18...27 Vdc
Current consumption	≈20 mA average (**), <2 A peak during cellular activity
Internal battery	12 V lead-acid rechargeable internal battery, integrated battery charger
USB output	Yes, with Mini-USB connector (CP31 cable)
RS485 output	No
Ethernet connection	No
Wi-Fi connection	No
Cellular connection	Yes, for the transmission of alarm e-mail or SMS and data by e-mail , FTP or HTTP (Cloud).
Operating conditions	-40...+70 °C / 0...100 %RH
Dimensions	270 x 170 x 110 mm (excluding antenna)
Weight	1 kg approx.
Housing	Polycarbonate
Protection degree	IP 65 (with protective cap on the USB connector)

(**) With typical cellular activity. The intensive use of the cellular communication can significantly increase the power consumption and reduce the battery life.



ORDERING CODES

HD35APGMT.	RADIO FREQUENCY:
HD35AP3GMT.	J = 915.9-929.7 MHz
HD35AP4GMT.	E = 868 MHz (Europe)
	U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)

HD35REW - WIRELESS REPEATER (RANGE EXTENDER)



The device is able to act as a bridge between the base unit HD35AP... and the remote data loggers HD35ED..., allowing the communication distance between data loggers and base unit to be increased.

Several repeaters in cascade can be used.

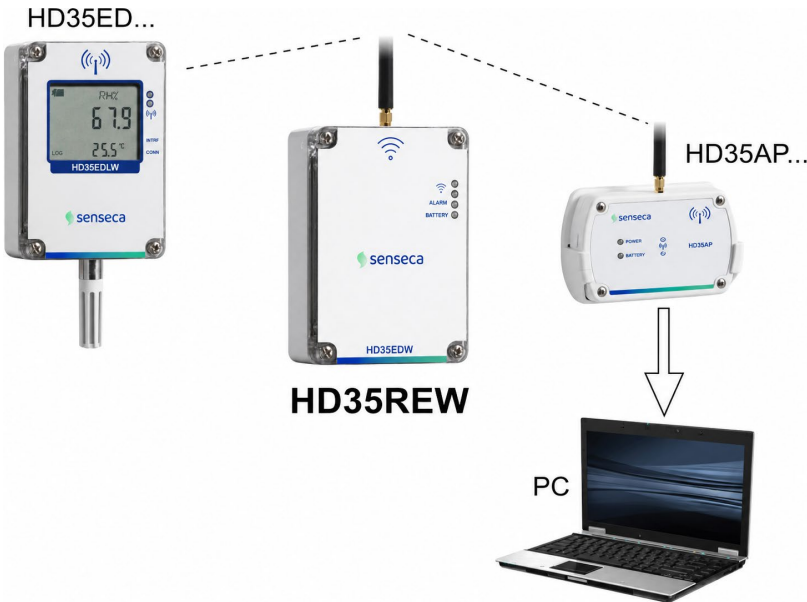
External 6 Vdc power supply. Internal backup battery.

Configuration via **HD35AP-S** software. Wall mount or fixing to a mast with optional supports

TECHNICAL CHARACTERISTICS

Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz or 921.5-928 MHz depending on the frequency in use in the country of installation
Transmission range	In open field: 300 m (E)/ 180 m (U) towards data loggers with internal antenna. > 500 m (E, U) towards base unit, repeaters and data loggers with external antenna. (can be reduced in presence of obstacles or adverse atmospheric conditions)
Antenna	External whip antenna
Power supply	Internal 3.6 V lithium-thionyl chloride (Li-SOCl ₂) not rechargeable battery, capacity 8400 mAh, size C, Molex 5264 2-pole connector.
Battery life	2 years typical (repeating the signal of 5 data loggers transmitting every 30 s)
Operating conditions	-20...+70 °C / 0...100 %RH non condensing
Dimensions	120 x 80 x 55 mm (excluding antenna)
Weight	250 g approx.
Housing	Polycarbonate
Protection degree	IP 67

EXTENDING THE TRANSMISSION RANGE



ORDERING CODES

HD35REW.	RADIO FREQUENCY: E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand) The option J (Japan) is not available.
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8 Outdoor Models – End Devices

Measured quantities	Sensor/configuration	Models
Temperature	NTC probe with cable, 1 or 3 inputs	HD35EDLWN/1TC, HD35EDLWN/3TC
Temperature	Pt100/Pt1000 probe with cable, 1 or 3 inputs	HD35EDLW7P/1TC, HD35EDLW7P/3TC
Temperature	K, J, T, N or E thermocouples, 4 inputs	HD35EDLWK/4TC
Relative Humidity & Temperature	Combined NTC probe with cable	HD35EDLW1NTC
Relative Humidity, Temperature & Atmospheric Pressure	Combined NTC probe and integrated pressure sensor	HD35EDLW14bNTC
Relative Humidity & Temperature	Combined Pt100 probe with cable	HD35EDLW17PTC
Relative Humidity, Temperature & Atmospheric Pressure	Combined Pt100 probe and integrated pressure sensor	HD35EDLW14b7PTC
Particulate Matter	PM1.0, PM2.5 and PM10; external power supply	HD35EDWPM
Particulate Matter	PM1.0, PM2.5 and PM10; USB power supply	HD35EDWPM-USB
Particulate Matter & CO ₂	External power supply	HD35EDWPMB
Particulate Matter & CO ₂	USB power supply	HD35EDWPMB-USB
Solar Radiation	Pyranometer input	HD35EDLWRTC
Solar Radiation & PV Panel Temperature	Pyranometer and Pt100/Pt1000 inputs	HD35EDLW7PRTC
Rainfall	Rain gauge with contact output	HD35EDLWPTC
Rainfall & Water Level	Rain gauge and level sensor inputs	HD35EDLWDPTC
Leaf Wetness, Relative Humidity & Temperature	Combined RH/T and leaf-wetness probes	HD35EDLW1NLTC
Soil Water Content & Temperature	Combined VWC/T probe, 1 or 3 inputs	HD35EDWLSTC, HD35EDWLS/3TC
Standard Sensors	Four configurable terminal inputs; internal battery	HD35EDLWH
Standard Sensors	Four configurable terminal inputs; external power supply	HD35EDLWHE
RS485 Modbus Sensors & Rainfall	Modbus-RTU and contact inputs	HD35ELDWM-B
WBGT Index	ISO 7243 measurement configuration	HD35EDLWWBGT
WBGT Index	With combined RH/T probe; not ISO 7243 compliant	HD35EDLWWBGT1

ANTENNA AND SOLAR RADIATION OPTIONS

HD35 outdoor data loggers are available with internal or external antennas, with or without a 3 m cable, and with optional solar radiation shield and mast-mounting hardware. Select the required suffix from the table below.

Suffix	Configuration to add at the end of the ordering code
Blank	Internal antenna, without solar radiation shield or mast mounting*
W	Fixed external antenna, without solar radiation shield or mast mounting
X	Fixed external antenna, with solar radiation shield and mast-mounting kit
Y	External antenna with 3 m cable, without solar radiation shield or mast mounting
Z	External antenna with 3 m cable, with solar radiation shield and mast-mounting kit

***Not available for models operating in the J frequency band.**

Example: HD35EDLWN/1TC.EW

HD35EDLWN/1TC – HD35EDLWN/3TC - WATERPROOF 1 OR 3-INPUT TEMPERATURE WIRELESS DATA LOGGER FOR NTC SENSOR TEMPERATURE PROBES WITH CABLE



Temperature wireless data logger with custom LCD display. **IP 67** waterproof housing.

It stores the measures in its internal memory (from 42,000 to 68,000 samples depending on the number of inputs) and transmits the logged data to the base unit automatically at regular intervals or upon request. Depending on the model, one, two or three inputs with M12 connector for temperature probes with **NTC10K Ω** sensor:

- **HD35EDLWN/1TC**: one input (68,000 samples)
- **HD35EDLWN/3TC**: three inputs (42,000 samples)

Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software. Powered by the internal battery. Wall mount or fixing to a mast with optional supports.

TECHNICAL CHARACTERISTICS

Temperature	
Sensor	NTC 10 k Ω @ 25 °C
Measuring range	-40...+105 °C
Resolution	0.1 °C
Accuracy	± 0.3 °C @ T=0...+70 °C ± 0.4 °C @ T<0 °C and T>+70 °C
Stability	0.1 °C / year
Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz, 921.5-928 MHz or 915,9-929,7 MHz depending on the frequency in use in the country of installation
Transmission range	In open field: 300 m (E, J)/ 180 m (U) with internal antenna. > 500 m (E, J, U) with external antenna. (can be reduced in presence of obstacles or adverse atmospheric conditions)
Logging interval	1, 2, 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Power supply	Non rechargeable lithium thionyl chloride (Li-SOCl ₂) internal battery, 3.6 V, size A, 2-pole Molex 5264 connector
Battery life	2 years typical (without repeaters, measurement interval 5 s and log interval 30 s)
Operating conditions	-20...+70 °C / 0...100 %RH non condensing
Weight	250 g approx.
Housing	Polycarbonate
Protection degree	IP 67

PROBES

TP35N1.../C: NTC temperature probe. Range -40...+105 °C. $\varnothing 5 \times 40$ mm AISI 316 tube. 4-pole M12 connector. Cable length 3 m (TP35N1.3/C), 5 m (TP35N1.5/C) or 10 m (TP35N1.10/C)



ORDERING CODES

HD35EDLWN/	TC.	
		RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)
		NUMBER OF INPUTS: 1 = 1 input 3 = 3 inputs

The antenna is internal by default; on request, the antenna can be external fixed or with 3 m cable. For antenna, solar radiation shield and mast-mounting options, see "Outdoor Installation Options" on page 40.

HD35EDLW7P/1TC – HD35EDLW7P/3TC - WATERPROOF 1 OR 3-INPUT TEMPERATURE WIRELESS DATA LOGGER Pt100/Pt1000 SENSOR TEMPERATURE PROBES WITH CABLE



Temperature wireless data logger with custom LCD display. **IP 67** waterproof housing.

It stores the measures in its internal memory (from 42,000 to 68,000 samples depending on the number of inputs) and transmits the logged data to the base unit automatically at regular intervals or upon request.

Depending on the model, one, two or three inputs with M12 connector for temperature probes with **Pt100/Pt1000** sensor:

- **HD35EDW7P/1 – HD35EDLW7P/1**: one input (**68,000 samples**)
- **HD35EDW7P/3 – HD35EDLW7P/3**: three inputs (**42,000 samples**)

Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software. Powered by the internal battery.

Wall mount or fixing to a mast with optional supports.

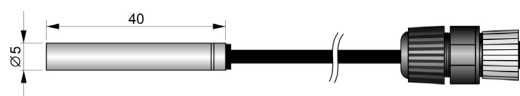
TECHNICAL CHARACTERISTICS

Temperature	
Sensor	Pt100 / Pt1000
Measuring range	-200...+650 °C
Resolution	Configurable 0.1/0.01 °C
Accuracy	±0.1 °C plus the error of the connected probe
Stability	0.1 °C/year
Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz, 921.5-928 MHz or 915,9-929,7 MHz depending on the frequency in use in the country of installation
Transmission range	In open field: 300 m (E, J)/ 180 m (U) with internal antenna. > 500 m (E, J, U) with external antenna. (can be reduced in presence of obstacles or adverse atmospheric conditions)
Logging interval	1(*), 2(**), 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Power supply	Non rechargeable lithium thionyl chloride (Li-SOCl ₂) internal battery, 3.6 V, size A, 2-pole Molex 5264 connector
Battery life	2 years typ. (without repeaters, measurement interval 10 s and log interval 30 s)
Operating conditions	-20...+70 °C / 0...100 %RH non condensing
Weight	250 g approx.
Housing	Polycarbonate
Protection degree	IP 67

(*) Logging from one input – (**) Logging from two inputs

PROBES

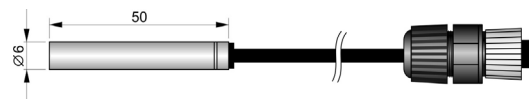
TP35.1..../C: 4-wire 1/3 DIN **Pt1000** temperature probe. Range -50...+105 °C. Ø5x40 mm AISI 316 tube. Cable ending with 4-pole M12 connector. Cable length 3 m (TP35.1.3/C), 5 m (TP35.1.5/C) or 10 m (TP35.1.10/C).



TP35.2..../C: 4-wire 1/3 DIN **Pt1000** temperature probe. Range -40...+105 °C. Ø5x20 mm thermoplastic rubber tube. Suitable for use with chemically aggressive solutions as well. Cable ending with 4-pole M12 connector. Cable length 3 m (TP35.2.3/C) or 5 m (TP35.2.5/C).



TP35.4..../C: 4-wire 1/3 DIN **Pt100** temperature probe. Range -50...+105 °C. Ø6x50 mm AISI 316 tube. Cable ending with 4-pole M12 connector. Cable length 3 m (TP35.4.3/C) or 5 m (TP35.4.5/C).



ORDERING CODES

HD35EDLW7P/	TC.	
		RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)
	NUMBER OF INPUTS: 1 = 1 input 3 = 3 inputs	

The antenna is internal by default; on request, the antenna can be external fixed or with 3 m cable. For antenna, solar radiation shield and mast-mounting options, see “Outdoor Installation Options” on page 40.

HD35EDLWK/4TC - WATERPROOF 4-INPUT TEMPERATURE WIRELESS DATA LOGGER FOR THERMOCOUPLE TEMPERATURE PROBES



Temperature wireless data logger with custom LCD display. **IP 67** waterproof housing. It stores the measures in its internal memory (from 36.000 to 68.000 samples depending on the number of inputs used) and transmits the logged data to the base unit automatically at regular intervals or upon request.

Four inputs with connector for **K-J-T-N-E thermocouple** temperature probes.

Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software. Powered by the internal battery. Wall mount or fixing to a mast with optional supports.

TECHNICAL CHARACTERISTICS

Temperature	
Thermocouple type	K, J, T, N, E The inputs are isolated from each other (60 V insulation)
Measuring range	type K: -200...+1370 °C type J: -100...+750 °C type T: -200...+400 °C type N: -200...+1300 °C type E: -200...+750 °C
Resolution	0.1 °C
Accuracy (excluding probe error)	type K: ±0.1 °C (< 600 °C) type J: ±0.1 °C ±0.2 °C (> 600 °C) type T: ±0.1 °C type N: ±0.1 °C (< 600 °C) ±0.2 °C (> 600 °C) type E: ±0.1 °C (< 300 °C) ±0.2 °C (> 300 °C)
Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz or 921.5-928 MHz depending on the frequency in use in the country of installation
Transmission range	In open field: 300 m (E, J)/ 180 m (U) with internal antenna. > 500 m (E, J, U) with external antenna. (can be reduced in presence of obstacles or adverse atmospheric conditions)
Logging interval	1(*), 2(**), 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Power supply	Non rechargeable lithium thionyl chloride (Li-SOCl ₂) internal battery, 3.6 V, C format, 2-pole Molex 5264 connector
Battery life	4 years typical with tmeas 10 s and tlog 30 s
Operating conditions	-20...+70 °C / 0...100 %RH non condensing
Weight	250 g approx.
Housing	Polycarbonate
Protection degree	IP 67

(*) Recording **1 input** - (**) Recording **2 inputs**

ORDERING CODES

HD35EDLWK/4TC.	
	RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)

The antenna is internal by default; on request, the antenna can be external fixed or with 3 m cable. For antenna, solar radiation shield and mast-mounting options, see "Outdoor Installation Options" on page 40.

HD35EDLW1NTC / HD35EDLW14bNTC - WATERPROOF TEMPERATURE AND HUMIDITY WIRELESS DATA LOGGER FOR T/RH COMBINED PROBE WITH CABLE



Temperature and humidity wireless data logger with custom LCD display. **IP 67** waterproof housing. It stores the measures in its internal memory (24,000 samples) and transmits the logged data to the base unit automatically at regular intervals or upon request. One input with M12 connector for the **HP3517WTC...** temperature and relative humidity combined probe (**NTC10KΩ** temperature sensor).

Calculated quantities: dew point, wet bulb temperature, absolute humidity, mixing ratio, partial vapour pressure.

Optionally available with **integrated barometric sensor** (300...1100 hPa) – 22,000 samples.

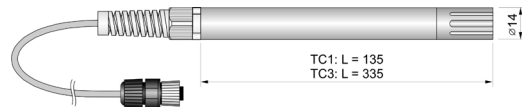
Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software. Powered by the internal battery. Wall mount or fixing to a mast with optional supports.

TECHNICAL CHARACTERISTICS

Humidity	
Sensor	Capacitive
Measuring range	0...100% RH
Resolution	0.1% RH
Accuracy	± 1.8 %RH @ (RH=0...85%, T=15...35 °C) ± 2.5 %RH @ (RH=85...100%, T=15...35 °C) ± (2 + 1.5% meas.)% @ T=remaining range
Sensor operating temp.	-40...+150 °C
Response time	T ₆₃ < 10 s (10→80% @T const., air speed 2 m/s, with filter)
Stability	1%/year (in the whole temperature and RH range)
Temperature	
Sensor	NTC 10 kΩ @ 25 °C
Measuring range	-40...+105 °C
Resolution	0.1 °C
Accuracy	±0.3 °C @ T=0...+70 °C ±0.4 °C @ T<0 °C and T>+70 °C
Stability	0.1 °C / year
Atmospheric Pressure	
Sensor	Piezoresistive
Measuring range	300...1100 hPa
Resolution	0.1 hPa
Accuracy	±0.5 hPa (700...1100 hPa) @T=20 °C ±1 hPa (500...1100 hPa) / ±1.5 hPa (300...500 hPa) @T=0...60 °C
Stability	±1 hPa/year
Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz, 921.5-928 MHz or 915,9-929,7 MHz depending on the frequency in use in the country of installation
Transmission range	In open field: 300 m (E, J)/ 180 m (U) with internal antenna. > 500 m (E, J, U) with external antenna. (can be reduced in presence of obstacles or adverse atmospheric conditions)
Logging interval	1, 2, 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Power supply	Non rechargeable lithium thionyl chloride (Li-SOCl ₂) internal battery, 3.6 V, size A, 2-pole Molex 5264 connector
Battery life	2 years typical (without repeaters, measurement interval 5 s and log interval 30 s)
Operating conditions	-20...+70 °C / 0...100 %RH non condensing
Weight	250 g approx.
Housing	Polycarbonate
Protection degree	IP 67

PROBES

HP3517W... Temperature and relative humidity combined probe. R.H. sensor measuring range: 0...100%. NTC temperature sensor. Ø14 mm. Filter in PBT and stainless steel grid. 4-pole M12 connector.



HP3517W	.	
		Cable length: 2 = 2 m 5 = 5 m 10 = 10 m
		Stem length and material: TC1 = 135 mm in PBT TC2 = 150 mm in AISI 304 TC3 = 335 mm in PBT

TP35N1.../C: NTC temperature probe. Range -40...+105 °C. Ø5x40 mm AISI 316 tube. 4-pole M12 connector. Cable length 3 m (TP35N1.3/C), 5 m (TP35N1.5/C) or 10 m (TP35N1.10/C)



ORDERING CODES

HD35EDLW1	NTC.	
		RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)
		Blank = without barometric sensor 4b = with barometric sensor

The antenna is internal by default; on request, the antenna can be external fixed or with 3 m cable. For antenna, solar radiation shield and mast-mounting options, see “Outdoor Installation Options” on page 40.

HD35EDLW17PTC/ HD35EDLW14b7PTC - WATERPROOF TEMPERATURE AND HUMIDITY AND ATMOSPHERIC PRESSURE WIRELESS DATA LOGGER FOR T/RH COMBINED PROBE WITH CABLE



Temperature and humidity wireless data logger with custom LCD display. **IP 67** waterproof housing. It stores the measures in its internal memory (24,000 samples) and transmits the logged data to the base unit automatically at regular intervals or upon request. One input with M12 connector for the **HP3517ETC...** temperature and relative humidity combined probe (**Pt100** temperature sensor).

Calculated quantities: dew point, wet bulb temperature, absolute humidity, mixing ratio, partial vapour pressure.

Optionally available with **integrated barometric sensor** (300...1100 hPa) – 22,000 samples.

Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software. Powered by the internal battery. Wall mount or fixing to a mast with optional supports.

TECHNICAL CHARACTERISTICS

Humidity	
Sensor	Capacitive
Measuring range	0...100% RH
Resolution	0.1% RH
Accuracy	± 1.8 %RH @ (RH=0...85%, T=15...35 °C) ± 2.5 %RH @ (RH=85...100%, T=15...35 °C) ± (2 + 1.5% meas.)% @ T=remaining range
Sensor operating temp.	-40...+150 °C
Response time	T ₆₃ < 10 s (10→80% @T const., air speed 2 m/s, with filter)
Stability	1%/year (in the whole temperature and RH range)
Temperature	
Sensor	Pt100 / Pt1000
Measuring range	-40...+150 °C
Resolution	Configurable 0.1/0.01 °C
Accuracy	±0.1 °C plus the error of the connected probe
Stability	0.1 °C / year
Atmospheric Pressure	
Sensor	Piezoresistive
Measuring range	300...1100 hPa
Resolution	0.1 hPa
Accuracy	±0.5 hPa (700...1100 hPa) @T=20 °C ±1 hPa (500...1100 hPa) / ±1.5 hPa (300...500 hPa) @T=0...60 °C
Stability	±1 hPa/year
Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz, 921.5-928 MHz or 915,9-929,7 MHz depending on the frequency in use in the country of installation
Transmission range	In open field: 300 m (E, J)/ 180 m (U) with internal antenna. > 500 m (E, J, U) with external antenna. (can be reduced in presence of obstacles or adverse atmospheric conditions)
Logging interval	1, 2, 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Power supply	Non rechargeable lithium thionyl chloride (Li-SOCl ₂) internal battery, 3.6 V, size A, 2-pole Molex 5264 connector
Battery life	2 years typical (without repeaters, measurement interval 5 s and log interval 30 s)
Operating conditions	-20...+70 °C / 0...100 %RH non condensing
Weight	250 g approx.
Housing	Polycarbonate
Protection degree	IP 67

PROBES

HP3517E... Temperature and relative humidity combined probe. R.H. sensor measuring range: 0...100%. Pt100 temperature sensor. Ø14 mm. Filter in PBT and stainless steel grid. 8-pole M12 connector.



HP3517E	.	
		Cable length: 2 = 2 m 5 = 5 m 10 = 10 m
		Stem length and material: TC1 = 135 mm in PBT TC2 = 150 mm in AISI 304 TC3 = 335 mm in PBT

The temperature only probes with Pt100/Pt1000 sensor and 4-pole M12 connector cannot be connected to the input for HP3517ETC... temperature and relative humidity combined probes with 8-pole M12 connector.

ORDERING CODES

HD35EDLW1	7PTC.	
		RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)
		Blank = without barometric sensor 4b = with barometric sensor

The antenna is internal by default; on request, the antenna can be external fixed or with 3 m cable. For antenna, solar radiation shield and mast-mounting options, see "Outdoor Installation Options" on page 40.

HD35EDLWRTC / HD35EDLW7PRTC - WATERPROOF SOLAR RADIATION WIRELESS DATA LOGGER



Solar radiation wireless data logger with custom LCD display. **IP 67** waterproof housing. It stores the measures in its internal memory (42,000 samples) and transmits the logged data to the base unit automatically at regular intervals or upon request.

One input with M12 connector for the pyranometer. A pyranometer with mV output is required. The pyranometer mV signal is also displayed.

Calculated quantities: daily solar radiation in Wh/m² (Wh = watt hour).

Optionally available with **additional input for TP35878... temperature probes for solar panel**. – 36,000 samples.

Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software. Powered by the internal battery. Wall mount or fixing to a mast with optional supports.

TECHNICAL CHARACTERISTICS

Solar Radiation(*)	
Sensor	Thermopile
Measuring range	0...2000 W/m ²
Resolution	1 W/m ²
Sensitivity	Configurable in mV/(kW m ⁻²)
(*) Other characteristics depend on the sensor connected; please refer to the data sheet of the sensor.	
Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz, 921.5-928 MHz or 915,9-929,7 MHz depending on the frequency in use in the country of installation
Transmission range	In open field: 300 m (E, J)/ 180 m (U) with internal antenna. > 500 m (E, J, U) with external antenna. (can be reduced in presence of obstacles or adverse atmospheric conditions)
Logging interval	1, 2, 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Power supply	Non rechargeable lithium thionyl chloride (Li-SOCl ₂) internal battery, 3.6 V, size A, 2-pole Molex 5264 connector
Battery life	2 years typical (without repeaters, measurement interval 5 s and log interval 30 s)
Operating conditions	-20...+70 °C / 0...100 %RH non condensing
Weight	250 g approx.
Housing	Polycarbonate
Protection degree	IP 67

PROBES

For Pyranometers please check the relevant datasheets of LPS10 – LPS02 – LPS03.

TP35878ISS... - 4-wire 1/3 DIN Pt100 contact temperature probe for solar panel. Range -40...+85 °C. Aluminum disk Ø30 x 7.5 mm. Cable length 5 m (TP35878ISS.5) or 10 m (TP35878ISS.10). Cable ending with 4-pole M12 connector.

ORDERING CODES

HD35EDLW	RTC.	
		RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)
		Blank = without additional input for temperature probe 7P = with additional input for temperature probe

The antenna is internal by default; on request, the antenna can be external fixed or with 3 m cable. For antenna, solar radiation shield and mast-mounting options, see "Outdoor Installation Options" on page 40.

HD35EDLWPTC - WATERPROOF RAINFALL QUANTITY WIRELESS DATA LOGGER



Rainfall quantity wireless data logger with custom LCD display. **IP 67** waterproof housing. It stores the measures in its internal memory (36,000 samples) and transmits the logged data to the base unit automatically at regular intervals or upon request.

One input with M12 connector for the rain gauge.

Calculated quantities: rainfall rate in mm/h, daily rainfall in mm.

Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software. Powered by the internal battery. Wall mount or fixing to a mast with optional supports.

TECHNICAL CHARACTERISTICS

Rainfall quantity(*)	
Sensor	Tipping bucket with NC or NO configurable contact
Resolution	Configurable 0.1 – 0.2 – 0.5 mm/tipping
(*) Other characteristics depend on the sensor connected; please refer to the data sheet of the sensor.	
Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz, 921.5-928 MHz or 915,9-929,7 MHz depending on the frequency in use in the country of installation
Transmission range	In open field: 300 m (E, J)/ 180 m (U) with internal antenna. > 500 m (E, J, U) with external antenna. (can be reduced in presence of obstacles or adverse atmospheric conditions)
Logging interval	1, 2, 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Power supply	Non rechargeable lithium thionyl chloride (Li-SOCl ₂) internal battery, 3.6 V, size A, 2-pole Molex 5264 connector
Battery life	2 years typical (without repeaters, measurement interval 5 s and log interval 30 s)
Operating conditions	-20...+70 °C / 0...100 %RH non condensing
Weight	250 g approx.
Housing	Polycarbonate
Protection degree	IP 67

PROBES

For Rain Gauges please check the relevant datasheets of RTD04 series and RTD02 series.

ORDERING CODES

HD35EDLWPTC.	
	RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)

The antenna is internal by default; on request, the antenna can be external fixed or with 3 m cable. For antenna, solar radiation shield and mast-mounting options, see "Outdoor Installation Options" on page 40.

HD35EDLWDPTC - WATERPROOF LEVEL AND RAINFALL QUANTITY WIRELESS DATA LOGGER



Level and rainfall quantity wireless data logger with custom LCD display. **IP 67** waterproof housing. It stores the measures in its internal memory (28,000 samples) and transmits the logged data to the base unit automatically at regular intervals or upon request.

Two inputs: one with **M12 connector** for the rain gauge and one with **cable gland** for the level sensor. The level is measured with a sensor of pressure relative to the atmosphere.

Calculated quantities: rainfall rate in mm/h, daily rainfall in mm.

Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software. Powered by the internal battery. Wall mount or fixing to a mast with optional supports.

TECHNICAL CHARACTERISTICS

Level	
Sensor	Sensor of pressure relative to the atmosphere
Pressure measuring range	0...1 bar
Level measuring range	Depends on the fluid density (configurable via software). For water: 0...10 m approx.
Resolution	1 hPa / 0,01 m (for water)
Accuracy	±0.8% f.s. @ 25 °C
Rainfall quantity(*)	
Sensor	Tipping bucket with NC or NO configurable contact
Resolution	Configurable 0.1 – 0.2 – 0.5 mm/tipping
(*) Other characteristics depend on the sensor connected; please refer to the data sheet of the sensor.	
Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz, 921.5-928 MHz or 915,9-929,7 MHz depending on the frequency in use in the country of installation
Transmission range	In open field: 300 m (E, J)/ 180 m (U) with internal antenna. > 500 m (E, J, U) with external antenna. (can be reduced in presence of obstacles or adverse atmospheric conditions)
Logging interval	1, 2, 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Power supply	Non rechargeable lithium thionyl chloride (Li-SOCl ₂) internal battery, 3.6 V, size A, 2-pole Molex 5264 connector
Battery life	2 years typical (without repeaters, measurement interval 5 s and log interval 30 s)
Operating conditions	-20...+70 °C / 0...100 %RH non condensing
Weight	250 g approx.
Housing	Polycarbonate
Protection degree	IP 67

PROBES

For Rain Gauges please check the relevant datasheets of **RTD04 series** and **RTD02 series**.

ORDERING CODES

HD35EDLWDPTC.	
	RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)

The antenna is internal by default; on request, the antenna can be external fixed or with 3 m cable. For antenna, solar radiation shield and mast-mounting options, see "Outdoor Installation Options" on page 40.

HD35EDLW1NLTC - WATERPROOF TEMPERATURE, HUMIDITY AND LEAF WETNESS WIRELESS DATALOGGER



Temperature and humidity and leaf wetness wireless data logger with custom LCD display. **IP 67** waterproof housing. It stores the measures in its internal memory (22,000 samples) and transmits the logged data to the base unit automatically at regular intervals or upon request.

- Two inputs with M12 connector: one for the **HP3517WTC...** temperature and relative humidity combined probe (AISI 304, **NTC10KΩ** temperature sensor)
- one for the leaf wetness sensor **HP3501...**

Calculated quantities: dew point, wet bulb temperature, absolute humidity, mixing ratio, partial vapour pressure.

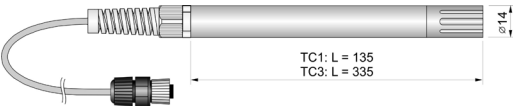
Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software. Powered by the internal battery. Wall mount or fixing to a mast with optional supports.

TECHNICAL CHARACTERISTICS

Humidity	
Sensor	Capacitive
Measuring range	0...100%
Resolution	0.1%
Accuracy	@ T=15...35 °C @ T= remaining range
Sensor operating temperature	±1.8% (0...85%) / ±2.5% (85...100%) ±(2 + 1.5% of the measure)%
Response time	-20...+80 °C (ED...TV) / -40...+150 °C (ED...TC)
Stability	T ₆₃ < 10 s (10→80% @T const., air speed 2 m/s, with filter)
Stability	1%/year (in the whole temperature and RH range)
Temperature	
Sensor	NTC 10 kΩ @ 25 °C
Measuring range	-40...+105 °C
Resolution	0.1 °C
Accuracy	±0.3 °C @ T=0...+70 °C ±0.4 °C @ T<0 °C and T>+70 °C
Stability	0.1 °C / year
Leaf wetness	
Sensor	Capacitive
Measuring range	0...100% of leaf area wetness
Resolution	0.1%
Accuracy	±5 % @ 23 °C
Sensor operating temp.	-30...+60 °C
Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz, 921.5-928 MHz or 915,9-929,7 MHz depending on the frequency in use in the country of installation
Transmission range	In open field: 300 m (E, J)/ 180 m (U) with internal antenna. > 500 m (E, J, U) with external antenna. (can be reduced in presence of obstacles or adverse atmospheric conditions)
Logging interval	1, 2, 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Power supply	Non rechargeable lithium thionil chloride (Li-SOCl ₂) internal battery, 3.6 V, size A, 2-pole Molex 5264 connector
Battery life	2 years typical (without repeaters, measurement interval 5 s and log interval 30 s)
Operating conditions	-20...+70 °C / 0...100 %RH non condensing
Weight	250 g approx.
Housing	Polycarbonate
Protection degree	IP 67

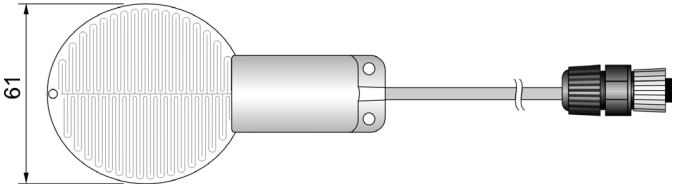
PROBES

HP3517W... Temperature and relative humidity combined probe. R.H. sensor measuring range: 0...100%. NTC temperature sensor. Ø14 mm. Filter in PBT and stainless steel grid. 4-pole M12 connector.



HP3517W	.	
		Cable length: 2 = 2 m 5 = 5 m 10 = 10 m
		Stem length and material: TC1 = 135 mm in PBT TC2 = 150 mm in AISI 304 TC3 = 335 mm in PBT

HP3501....: Leaf wetness sensor with double sensitive surface. 5 m (HP3501.5) or 10 m (HP3501.10) cable. 5-pole M12 connector.



ORDERING CODES

HD35EDLW1NLTC.	
	RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)

The antenna is internal by default; on request, the antenna can be external fixed or with 3 m cable. For antenna, solar radiation shield and mast-mounting options, see "Outdoor Installation Options" on page 40.

HD35EDLWS...TC - WATERPROOF SOIL TEMPERATURE AND VOLUMETRIC WATER CONTENT (VWC) WIRELESS DATA LOGGER



Soil temperature and volumetric water content wireless data logger with custom LCD display. **IP 67** waterproof housing. Custom LCD display (only with **option L**). It stores the measures in its internal memory (from 26,000 to 52,000 samples depending on the number of inputs) and transmits the logged data to the base unit automatically at regular intervals or upon request.

Depending on the model, one or three inputs with M12 connector for **HP3510.1** or **HP3510.2** soil temperature and volumetric water content combined probes:

- **HD35EDWS – HD35EDLWS:** one input (52,000 samples)
- **HD35EDWS/3 – HD35EDLWS/3:** three inputs (from 26,000 to 52,000)

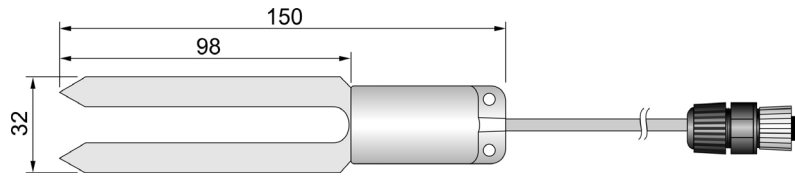
Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software. Powered by the internal battery. Wall mount or fixing to a mast with optional supports.

TECHNICAL CHARACTERISTICS

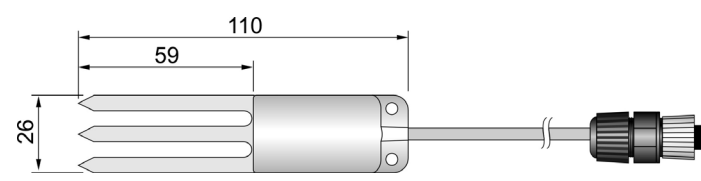
Soil volumetric water content	
Measuring principle	Capacitive
Measuring range	0...60% VWC (Volumetric Water Content)
Resolution	0.1%
Accuracy	±3 % between 0 and 50% VWC (standard mineral soil up to 5 mS/cm)
Measuring volume	Ø=100 mm x H=150 mm (HP3510.1...) Ø=80 mm x H=110 mm (HP3510.2...)
Sensor working temperature	-40...+60 °C
Temperature	
Sensor	NTC 10 kΩ @ 25 °C
Measuring range	-40...+60 °C
Resolution	0.1 °C
Accuracy	±0.5 °C
Stability	0.1 °C/year
Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz, 921.5-928 MHz or 915,9-929,7 MHz depending on the frequency in use in the country of installation
Transmission range	In open field: 300 m (E, J)/ 180 m (U) with internal antenna. > 500 m (E, J, U) with external antenna. (can be reduced in presence of obstacles or adverse atmospheric conditions)
Logging interval	1, 2, 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Power supply	Non rechargeable lithium thionyl chloride (Li-SOCl ₂) internal battery, 3.6 V, size C, 2-pole Molex 5264 connector
Battery life	2 years typical (without repeaters, measurement interval 5 s and log interval 30 s)
Operating conditions	-20...+70 °C / 0...100 %RH non condensing
Weight	250 g approx.
Housing	Polycarbonate
Protection degree	IP 67

PROBES

HP3510.1...: 2-electrode probe for measuring the soil volumetric water content. With integrated NTC temperature sensor. 5 m (HP3510.1.5) or 10 m (HP3510.1.10) cable. 5-pole M12 connector.



HP3510.2...: 3-electrode probe for measuring the soil volumetric water content in restricted volumes. Integrated NTC temperature sensor. 5 m (HP3510.2.5) or 10 m (HP3510.2.10) cable. 5-pole M12 connector.



ORDERING CODES

HD35EDLWS		TC.	
			RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)
	Number of inputs Blank = 1 input /3 = 3 inputs		

The antenna is internal by default; on request, the antenna can be external fixed or with 3 m cable. For antenna, solar radiation shield and mast-mounting options, see “Outdoor Installation Options” on page 40.

HD35EDWPM[B][-USB]- PARTICULATE MATTER WIRELESS DATA LOGGER WITH OPTIONAL CO₂ SENSOR



Particulate Matter and CO₂ (optional) wireless data logger. Measurement of PM1.0, PM2.5 and PM10. It stores the measures in its internal memory and transmits the logged data to the base unit automatically at regular intervals or upon request.

Min. 34,000 / Max. 60,000 samples for the model measuring only PM, Min. 26,000 / Max. 60,000 samples for the model measuring PM and CO₂.

Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software. Two power supply versions available: USB-powered or 7...30 Vdc external power supply.

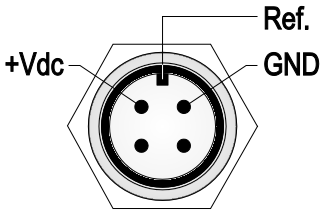
It can be wall mounted by means of the supplied flange.

TECHNICAL CHARACTERISTICS

Particulate Matter	
Measuring principle	Laser scattering
Pollutants detected	PM1.0, PM2.5, PM10
Measuring range	0...1000 µg/m ³ (for each pollutant)
Resolution	0.1 µg/m ³
Linearity error	<5%
Repeatability	<3%
Warm up time	<15 s
Temperature drift	<0.01 µg/m ³ / °C
CO₂ (optional)	
Sensor	Non-dispersive infrared rays (NDIR)
Measuring range	0...5,000 ppm
Resolution	1 ppm
Accuracy	±(50 ppm + 3% of measurement) @ 25 °C and 1013 hPa
Sensor operating conditions	-20...60 °C / 0...95%RH non condensing / 700...1100 hPa
Response time	T ₉₀ <120 s (air speed=2 m/s)
Calibration interval	>5 years (under normal operating conditions)
Atmospheric Pressure (in CO₂ sensor)	
Sensor	Piezoresistive
Measuring range	700...1100 hPa
Resolution	0.1 hPa
Accuracy	±2 hPa @ T=25 °C & RH=20...80% / Drift ±0.015 hPa/°C
Stability	±1 hPa/year
Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz, 921-928 MHz or 915,9-929,7 MHz depending on the frequency in use in the country of installation
Transmission range	In open field: 300 m (E, J)/ 180 m (U) with internal antenna. > 500 m (E, J, U) with external antenna. (can be reduced in presence of obstacles or adverse atmospheric conditions)
Measuring interval	1, 2, 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Power supply	USB-powered or external 7...30 Vdc depending on model
Connection	Mini-USB for USB-powered model Mini-USB (for PC) and 4-pole M12 (for external power supply) for 7...30 Vdc model
Operating conditions	-20...+70 °C / 0...95 %RH non condensing
Weight	330 g approx.
Housing	Polycarbonate
Protection degree	Equipped with a rain-proof and UV resistant inlet air filter – IP 53

CONNECTION

4-pole M12 male connector pinout for 7...30 Vdc external power supply version:



ORDERING CODES

HD35EDWPM			.	
				RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)
				Blank = 7...30 Vdc power supply -USB = USB-powered
				Blank = Only PM B = PM + CO ₂

HD35EDLWWBGT - WIRELESS DATA LOGGER FOR THE ANALYSIS OF THE WBGT INDEX ACCORDING TO ISO 7243



Wireless data logger with custom LCD display for the analysis of the **indoor and outdoor WBGT** (Wet Bulb Globe Temperature) index **according to ISO 7243**. **IP 67** waterproof housing. It stores the measures in its internal memory (22,000 samples) and transmits the logged data to the base unit automatically at regular intervals or upon request.

Three inputs with M12 connector for the wet bulb temperature probe, the globe-thermometer temperature probe and the dry bulb temperature probe.

Supports and accessories for installing the measurement system on a tripod, wall or pole. (**optional**).

Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software.

Powered by the internal battery.

TECHNICAL CHARACTERISTICS

Dry bulb temperature	
Sensor	Pt100
Measuring range	-40...+100 °C
Resolution	0.1 °C
Accuracy	±0.1 °C plus the error of the connected probe
Stability	0.1 °C / year
Wet bulb temperature	
Sensor	Pt100
Measuring range	+4...+80 °C
Resolution	0.1 °C
Accuracy	±0.1 °C plus the error of the connected probe
Stability	0.1 °C / year
Globe-thermometer	
Sensor	Pt100
Measuring range	-30...+120 °C
Resolution	0.1 °C
Accuracy	±0.1 °C plus the error of the connected probe
Stability	0.1 °C / year
Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz, 921-928 MHz or 915,9-929,7 MHz depending on the frequency in use in the country of installation
Transmission range	In open field: 300 m (E, J)/ 180 m (U) with internal antenna. > 500 m (E, J, U) with external antenna. (can be reduced in presence of obstacles or adverse atmospheric conditions)
Logging interval	2, 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Power supply	Non rechargeable lithium thionyl chloride (Li-SOCl ₂) internal battery, 3.6 V, A format, 2-pole Molex 5264 connector
Battery life	2 years typ. (without repeaters, measurement interval 10 s and log interval 30 s)
Operating conditions	-20...+70 °C / 0...100 %RH non condensing
Weight	250 g approx.
Housing	Polycarbonate
Protection degree	IP 67

PROBES

TP3501TC2: Natural ventilation wet bulb probe. Class A Pt100 sensor. Ø 14 mm, L=110 mm. Reservoir capacity 50 cc. Reservoir autonomy 96 hours @ 50 %RH and 23 °C. 2 m cable, 4-pole M12 connector. Supplied with two spare cotton wicks and 200 cc distilled water.

TP3204: Natural ventilation wet bulb probe for long-lasting measurements. Class A Pt100 sensor. Reservoir capacity 500 cc. Reservoir autonomy 15 days @ 40 °C. 2 m cable, 4-pole M12 connector. Supplied with two spare cotton wicks and 500 cc distilled water.

TP3575TC2: Globe-thermometer temperature probe. 1/3 DIN Pt100 sensor. Globe Ø 150 mm. Stem Ø 14 mm, L=110 mm. 2 m cable, 4-pole M12 connector.

TP3576TC2: Globe-thermometer temperature probe. 1/3 DIN Pt100 sensor. Globe Ø 50 mm. Stem Ø 8 mm, L=170 mm. 2 m cable, 4-pole M12 connector.

TP3507TC2: 1/3 DIN Pt100 temperature probe. Ø 14 mm, L=140 mm. 2 m cable, 8-pole M12 connector. The outdoor installation of the probe requires the optional HD9007A-3 protection against solar radiations.

ORDERING CODES

HD35EDLWWBGT.	
	RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)

The antenna is internal by default; on request, the antenna can be external fixed or with 3 m cable. For antenna, solar radiation shield and mast-mounting options, see "Outdoor Installation Options" on page 40.

HD35EDLWWBT1 - WIRELESS DATA LOGGER FOR THE ANALYSIS OF THE WBGT INDEX NOT ACCORDING TO ISO 7243



Wireless data logger for the analysis of the **indoor and outdoor WBGT** (Wet Bulb Globe Temperature) index **not according to ISO 7243**.

IP 67 waterproof housing. Custom LCD display (only with **option L**). It stores the measures in its internal memory (22,000 samples) and transmits the logged data to the base unit automatically at regular intervals or upon request.

Two inputs with M12 connector for the **HP3517ETC2...** temperature and relative humidity combined probe (**Pt100** temperature sensor) and for the globe-thermometer temperature probe. The outdoor installation of the HP3517ETC2... probe requires HD9007A-3 protection against solar radiations.

Supports and accessories for installing the measurement system on a tripod, wall or pole. (**optional**).

Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software. Powered by the internal battery.

TECHNICAL CHARACTERISTICS

Temperature	
Sensor	Pt100
Measuring range	-40...+150 °C
Resolution	Configurable 0.1/0.01 °C
Accuracy	±0.1 °C plus the error of the connected probe
Stability	0.1 °C / year
Humidity	
Sensor	Capacitive
Measuring range	0...100% RH
Resolution	0.1% RH
Accuracy	@ T=15...35 °C @ T= remaining range
	±1.8% (0...85%) / ±2.5% (85...100%) ±(2 + 1.5% of the measure)%
Sensor operating temperature	-40...+150 °C
Response time	T ₆₃ < 10 s (10→80% @T const., air speed 2 m/s, with filter)
Stability	1%/year (in the whole temperature and RH range)
Globe-thermometer	
Sensor	Pt100
Measuring range	-30...+120 °C
Resolution	0.1 °C
Accuracy	±0.1 °C plus the error of the connected probe
Stability	0.1 °C/year
Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz, 921-928 MHz or 915,9-929,7 MHz depending on the frequency in use in the country of installation
Transmission range	In open field: 300 m (E, J)/ 180 m (U) with internal antenna. > 500 m (E, J, U) with external antenna. (can be reduced in presence of obstacles or adverse atmospheric conditions)
Logging interval	2, 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min
Power supply	Non rechargeable lithium thionil chloride (Li-SOCl ₂) internal battery, 3.6 V, A format, 2-pole Molex 5264 connector
Battery life	2 years typ. (without repeaters, measurement interval 10 s and log interval 30 s)
Operating conditions	-20...+70 °C / 0...100 %RH non condensing
Weight	250 g approx.
Housing	Polycarbonate
Protection degree	IP 67

PROBES

HP3517ETC2...: temperature and relative humidity combined probe with capacitive R.H. sensor and Pt100 temperature sensor. AISI 304 stem. 8-pole M12 connector. 2, 5 or 10 m cable.

TP3575TC2: Pt100 sensor globe-thermometer temperature probe, globe Ø 150 mm. Stem: Ø 14 mm, length 110 mm. 2 m cable with 4-pole M12 connector.

TP3576TC2: Pt100 sensor globe-thermometer temperature probe, globe Ø 50 mm. Stem: Ø 8 mm, length 170 mm. 2 m cable with 4-pole M12 connector.

ORDERING CODES

HD35EDLWWBGT1.	
	RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)

The antenna is internal by default; on request, the antenna can be external fixed or with 3 m cable. For antenna, solar radiation shield and mast-mounting options, see "Outdoor Installation Options" on page 40.

HD35EDLWH/ HD35EDLWHE - WATERPROOF WIRELESS DATA LOGGER WITH FOUR TERMINAL HEADER INPUTS FOR STANDARD SENSORS



Wireless data logger with custom LCD display and with four terminal header inputs for the connection of transmitters with 4÷20 mA, 0÷1/0÷10 V or 0÷50 mV output, Pt100/Pt1000 sensors, K, J, T, N, E thermocouples, sensors with voltage free contact output (max. one sensor) and potentiometric sensors. Wi

IP 67 waterproof housing. It stores the measures in its internal memory (from 28,000 to 58,000 samples depending on the number and type of connected sensors) and transmits the logged data to the base unit automatically at regular intervals or upon request.

Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software. Powered by the internal battery or external 7...28 Vdc power supply (**option E**). Wall mount or fixing to a mast with optional supports.

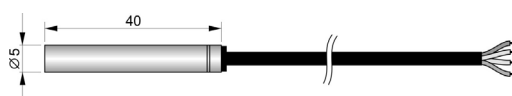
TECHNICAL CHARACTERISTICS

Pt100/Pt1000	
Measuring range	-200...+650 °C
Resolution	0.1 °C
Accuracy	± 0.1 °C (excluding probe error)
Sensor coefficient	$\alpha=0.00385\text{ }^{\circ}\text{C}^{-1}$
Connection	2, 3 or 4 wires
Thermocouple	
Thermocouple type	K, J, T, N, E (inputs not isolated, use thermocouples with isolated hot junction)
Measuring range	K: -200...+1370 °C J: -100...+750 °C E: -200...+750 °C T: -200...+400 °C N: -200...+1300 °C
Resolution	0.1 °C
Accuracy (excluding probe error)	K: ± 0.1°C (< 600°C) E: ± 0.1°C (< 300°C) ± 0.2°C (> 600°C) ± 0.2°C (> 300°C) N: ± 0.1°C (< 600°C) J: ± 0.1°C ± 0.2°C (> 600°C) T: ± 0.1°C
Current input	
Input range	0...20 mA or 4...20 mA
Shunt resistance	Internal (50 Ω)
Resolution	16 bit
Accuracy	±2 µA
Voltage input	
Input range	0...50 mV, -50...50 mV, 0...1 V, 0...10 V
Input Resistance	100 MΩ
Resolution	16 bit
Accuracy	±0.01% f.s.
Inputs for counting the switchings of a voltage-free contact	
Switching frequency	50 Hz max.
Hold Time	10 ms min.
Potentiometer input	
Value	Typical 10 kΩ
Resolution	16 bit
Accuracy	± 0.01% f.s.

Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz, 921-928 MHz or 915.9-929.7 MHz depending on the frequency in use in the country of installation
Transmission range	In open field: 300 m (E, J)/ 180 m (U) with internal antenna. > 500 m (E, J, U) with external antenna. (can be reduced in presence of obstacles or adverse atmospheric conditions)
Logging interval	5,10,15,30 s / 1,2,5,10,15,30,60 min
Power supply	Non rechargeable lithium thionil chloride (Li-SOCl ₂) internal battery, 3.6 V, C format, 2-pole Molex 5264 connector HD35EDLWHE: 7...28 Vdc (< 10 mA) external power supply
Battery life	4 years typical with tmeas 10 s and tlog 30 s
Operating conditions	-20...+70 °C / 0...100 %RH non condensing
Weight	250 g approx.
Housing	Polycarbonate
Protection degree	IP67

PROBES

TP35.1....: 4-wire 1/3 DIN **Pt1000** temperature probe. Range -50...+105 °C. Ø5x40 mm AISI 316 tube. Cable ending with free wires. Cable length 3 m (TP35.1.3), 5 m (TP35.1.5) or 10 m (TP35.1.10).



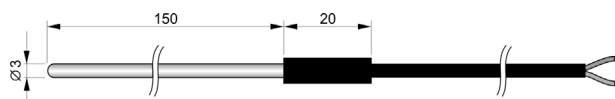
TP35.2....: 4-wire 1/3 DIN **Pt1000** temperature probe. Range -40...+105 °C. Ø5x20 mm thermoplastic rubber tube. Suitable for use with chemically aggressive solutions as well. Cable ending with free wires. Cable length 3 m (TP35.2.3) or 5 m (TP35.2.5)



TP35.4....: 4-wire 1/3 DIN **Pt100** temperature probe. Range -50...+105 °C. Ø6x50 mm AISI 316 tube. Cable ending with free wires. Cable length 3 m (TP35.4.3) or 5 m (TP35.4.5).



TP35K6.5: K-thermocouple temperature probe. Isolated junction. Class 1 according to IEC 60584-1. Range -50...+750 °C. Ø3x150 mm AISI 316 tube. Cable length 5 m. Cable ending with free wires.



ORDERING CODES

HD35EDLWH		
		RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)
		Blank = power supply via internal battery E = 7...28 Vdc external power supply

The antenna is internal by default; on request, the antenna can be external fixed or with 3 m cable. For antenna, solar radiation shield and mast-mounting options, see "Outdoor Installation Options" on page 40.

HD35EDLW-MB - WATERPROOF WIRELESS DATA LOGGER DATA LOGGER FOR SENSORS WITH RS485 MODBUS-RTU OUTPUT



Wireless data logger with custom LCD display and with RS485 Modbus-RTU input. It allows adding one or more sensors with RS485 Modbus-RTU output (for example an anemometer of the HD52.3D... series) in the wireless network. A voltage-free contact input allows connecting a rain gauge. As an alternative to the Modbus-RTU protocol, a proprietary protocol can be used to connect the HD2003 anemometer.

IP 67 waterproof housing. It stores the measures in its internal memory (from 14,000 to 52,000 samples depending on the number of acquired quantities) and transmits the logged data to the base unit automatically at regular intervals or upon request.

Acoustic alarm with internal buzzer. Configuration via **HD35AP-S** software. External 7...30 Vdc power supply. It has switched power supply output to power the sensors only when the measurement has to be carried out. The output, when enabled, has the same value as the power input.

Wall mount or fixing to a mast with optional supports.

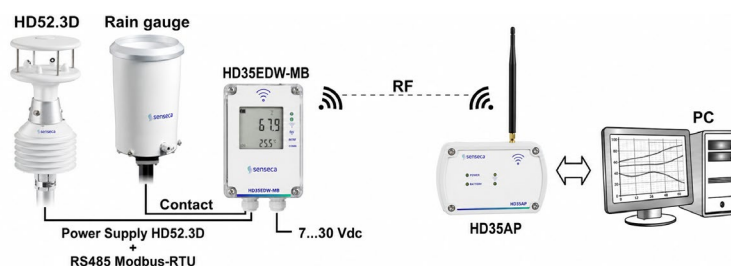
TECHNICAL CHARACTERISTICS

Instrument	
Transmission frequency	Factory configurable at choice among: 868 MHz, 902-928 MHz, 915-928 MHz, 921-928 MHz or 915,9-929,7 MHz depending on the frequency in use in the country of installation
Transmission range	In open field: 300 m (E, J)/ 180 m (U) with internal antenna. > 500 m (E, J, U) with external antenna. (can be reduced in presence of obstacles or adverse atmospheric conditions)
Logging interval	1, 2, 5, 10, 15, 30 s / 1, 2, 5, 10, 15, 30, 60 min (the minimum interval may be greater than 1 s if several devices are acquired)
Power supply	7...30 Vdc (< 10 mA) external power supply
Current consumption	< 10 mA
Input	RS485 Modbus-RTU / Contact input
Operating conditions	-20...+70 °C / 0...100 %RH non condensing
Weight	250 g approx.
Housing	Polycarbonate
Protection degree	IP 67

PROBES

For Rain Gauges & Anemometers please check the relevant datasheets on the website.

EXAMPLE

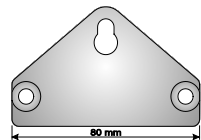


ORDERING CODES

HD35EDLW-MB	
	RADIO FREQUENCY: J = 915.9-929.7 MHz (Japan) E = 868 MHz (Europe) U = 902-928 MHz (U.S.A. and Canada) reducible to 915-928 MHz (Australia) or 921.5-928 MHz (New Zealand)

The antenna is internal by default; on request, the antenna can be external fixed or with 3 m cable. For antenna, solar radiation shield and mast-mounting options, see "Outdoor Installation Options" on page 40.

9 Outdoor Models – Accessories

CODE	Description	
CP23	Direct USB connection cable with male mini-USB connector on the instrument side and male A type USB connector on the PC side. Cable length 1.5 m.	
CP31	Direct USB connection cable with male mini-USB connector on the instrument side and male A type USB connector on the PC side. Cable length 1.5 m.	
HD35.24W	Flange for fixing to the wall.	
HD35.24C	Kit including the HD35.24W flange and a clamp for fixing the flange to a Ø 35...44 mm mast.	
HD35.24C5	Kit including the HD35.24W flange and a clamp for fixing the flange to a Ø 35...60 mm mast.	
HD35-ANTW	Spare fixed external RF antenna.	
HD35-ANTW3	Spare external RF antenna with 3 m cable. With bracket for fastening to the Ø 40...60 mm mast. For HD35EDW...	
HD35-BAT2	3.6 V lithium-thionyl chloride (Li-SOCl ₂) non-rechargeable battery, size A, 2-pole Molex 5264 connector. For all HD35EDW and LR35W except models using BAT-2013DB.	
BAT-2013DB	3.6 V lithium-thionyl chloride (Li-SOCl ₂) not rechargeable battery, size C, Molex 5264 2-pole connector. For the repeater HD35REW and the data loggers LR35W[D]PTC, LR35WS/xTC, LR35WRTC, LR35WH, HD35EDWK/4TC, HD35EDWH, HD35EDW1NLTC e HD35EDWS...TC.	
HD75	75%RH saturated solution for checking the relative humidity sensor, complete with screw adaptor for probes Ø 14 mm, M12×1 thread.	
HD33	33%RH saturated solution for checking the relative humidity sensor, complete with screw adaptor for probes Ø 14 mm, M12×1 thread.	
HD11	11%RH saturated solution for checking the relative humidity sensor, complete with screw adaptor for probes Ø 14 mm, M12×1 thread.	
	SOFTWARE	
HD35AP-CFR21	Advanced version of the HD35AP-S and HDServer1 software for the management of the data logging system in accordance with the FDA 21 CFR part 11 recommendations : traceability of activities (audit trail) performed with the software and management of users' access for the system configuration and viewing of data in the database. It works with USB hardware key (included).	

Notes

senseca.com



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